

AMERICAN AGRICULTURIST.

Designed to improve all Classes interested in Soil Culture.

AGRICULTURE IS THE MOST HEALTHFUL, THE MOST USEFUL, AND THE MOST NOBLE EMPLOYMENT OF MAN —WASHINGTON.

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WORK FOR THE MONTH.

"Nor must we pass untold, what arms they wield
Who labor tillage, and the furrowed field;
The crooked plow, the share, the towering height
Of wagons, and the carts unwieldy weight;
The sled, the tumbrel, hurdles, and the dail,
The fair of Bacchus with the flying sail.
These all must be prepared, if plowmen hope,
The promised blessing of a bounteous crop."

What a change has come over the art of tillage since Virgil sung his Georgics, and described the implements of Roman husbandry, and their various uses! One can hardly realize it, until he puts the drawings of the ancient plow beside the modern one, in all its varieties, adapted to every kind of soil, to every kind of location, and every crop. It is profitable to look back, at times, and to see what progress has been made in the cultivation of the farm crops, and what great improvements science has brought to his aid. Virgil, in describing the plow, gives this advice to the farmer:

"Young elms, with early force in copses bow,
Fit for the figure of the crooked plow,
Of eight feet long a fastened beam prepare,
On either side the head produce an ear,
And sink a socket for the shining share.
Of beech, the plow tail and the bending yoke;
Or softer linden hardened in the smoke."

Such was the plowing gear of the ancients, simply a natural growth of wood fashioned by the farmer himself. The shining share was but a blunt piece of iron fastened to the crooked plow beam, and not doing its work so well as a single tooth of a modern cultivator. And yet this rude plow, scratching but few inches in depth, was hardly improved until the present century. Indeed, there was little division of the farmer's labor until a quite recent period. The poet describes a state of agriculture among the Romans, in which the farmer is his own mechanic, shaping his plow beam by anticipating his wants, and compelling the young sapling to grow into a shape suitable for a plow beam. The present generation can remember that there was almost as little division of labor upon our own farms. The farmer made his own plow beams, fashioned the handles, and was only dependant upon the blacksmith for a plow share without a mold-board, for the clevis, and the irons of the yoke. There were no agricultural warehouses, stored with all the tools that the farmer wished to use. He made his own ox-yokes, and bows, and pins, and usually,

his own sleds and carts, with the exception of the wheels. Farmers' tools were only made to order, and these of the rudest kind.

Now, labor has been so far divided, that a farmer can find ready-made nearly every tool he wants to use upon his soil, and a great variety of tools that were unthought of fifty years ago. The plow is no longer a rude implement. It is the combined result of the highest scientific knowledge and practical skill. Years of patient study and investigation of the laws of mechanical force, have been spent upon it, so that it produces its results with the least expenditure of animal strength. It is so constructed that it is easily guided, and the holder can plow narrow or wide, deep or shallow, as suits his convenience. We have plows for various kinds of work,—for the sward and for the stubble, for the surface and for the sub-soil, for the side-hill and for the plain, those turning a single furrow and those turning two.

In looking at the changes which have come over our agriculture, none is more striking than that in the farmer himself. He looks at his business from a new stand-point. It is no longer a stereotyped routine, in which man uses as little mind as the dumb cattle he drives over his fields. Among the more intelligent class of cultivators, husbandry is no longer considered a perfected art. Its methods are not so well-established that it is deemed a waste of time and labor to try anything new. It is a tentative art, in which every man feels that he has much to learn, and experiments in new tools, crops, fertilizers, and modes of tillage are everywhere the order of the day. The practice of those who apply mind to husbandry, is gradually influencing that very large class who apply only muscle. They see the results of deep plowing, and high manuring, and, to some extent, imitate their thinking neighbors. This experimenting is everywhere practicable among the readers of our agricultural journals. This change in the farmer himself, we regard as the most important of all that has been done in agricultural reform. In it lies the germ of all future improvement, a work that is certain to go forward until the scientific principles of cultivation are everywhere recognized and practiced.

Deeper tillage is another prominent feature of modern husbandry. The plow has been constructed to meet this want of the soil. It has been discovered that the roots of cultivated crops take a much wider and deeper range than was formerly suspected. The soil is loosened and fertilized to meet

this necessity of the crops. Deep plowing is found to be a safeguard against the drouth of Summer. When the surface roots are parched, and no longer supply moisture, the bottom roots still find an abundant supply in the well-ventilated subsoil. All thinking farmers plow several inches deeper than they did twenty years ago.

The crops, too, that are cultivated, have felt the influence of this change. What a great variety of roots, grains, grasses, and fruits have been originated and brought into notice within the last twenty years. We have new kinds of corn, potatoes, oats, rye, wheat, apples, pears, and other fruits. Even the National Government has become interested in the distribution of seeds, and the results of the improvements in European agriculture, are now put within the reach of multitudes of our best cultivators in all parts of the country. A single publisher has even gone beyond the government in the number of packages of seeds distributed, if not in the total amount. So wide is the distribution of these valuable seeds, that it is exceedingly difficult for designing men to get control of anything valuable for the purpose of speculation. There is much less chance than formerly, for speculators to take advantage of the ignorance of farmers. A Rohan or Multicaulis or Sugar Cane fever is rendered impossible. The Dioscorea bubble bursts in its first season, and, "like the baseless fabric of a vision," leaves not a wreck of the brilliant hopes of its originator behind.

The stock upon the farms is as much improved as the crops. So strong has been the conviction of the necessity of full-blooded animals, to give a permanent character to our stock, that men of capital have visited the best breeders in England, and bought largely of their choicest animals, without regard to price. Stock breeding has fallen into competent hands, so that now we probably have as fine Durhams, Devons, and Alderneys, as can be found in the father land; while we are not far behind in our horses, sheep, and swine. A passion for fine stock is rapidly spreading, and as agriculture becomes more skillfully conducted, and better rewarded, farmers will have the means to gratify this laudable passion. Indeed, already the Durham and Devon stock is widely scattered, and more or less of full-blooded animals and grades may be found in almost every county where an Agricultural Society has been established.

Another sign of progress is, the increased attention paid to the fertilizing of the soil. It is felt, as never before, that this is the one

thing needful for the farm. With fertile acres, the tiller of the soil is master of his position, and can do what he likes. The machine will work, and turn out goods to order, and enrich its owner. Without it, the soil is his master, and he is but a slave. The more of it he owns the poorer he is. It is but a millstone, to drag him down into the depths of poverty. The poor cultivation of his poor acres, makes him a poor man. Fertility has become a prime necessity, and better methods are resorted to, to save what falls from the stock, and to increase these by all the vegetable and animal wastes of the farm. Barn-cellars and sheds, are now the adjuncts of most new barns, and are often affixed to old ones. The stock are stabled, not to shelter them and save fodder, but to save manure. The mines of the muck swamp are opened, and freely used to the joy of many a sandy plain and gravelly knoll. Old wastes and pastures are not only reclaimed, but are made more fertile and productive than they ever were in their best days. Art has done what it always ought to do, improved upon nature.

These are some of the things that cheer us in our work as journalists, the co-laborers of the tillers of the soil. It is good to know that this paper, as it visits the lumberman in the pine woods of Maine, the fruit growers, and the gardeners in the vicinity of the Metropolis, the plantations of the South, and the prairie farms of the West, is fulfilling its mission. The seed it has sown in years gone by, is springing up, and bearing its appropriate fruits. The tiller of the soil works more skillfully, and finds a better reward for his labor.

And now what word of counsel shall we offer, as we approach this fervid month, when work is a burden, and to sit still and see Nature work is the boon we covet.

"The plants around
Feel the too potent fevers; the tall maize
Rolls up its long green leaves; the clover droops
Its tender foliage, and declines its blooms.
But far in the fierce sunshine towereth hills
With all their growth of woods, silent and stern,
As if the scorching heat and dazzling light,
Were but an element they loved."

But the husbandman must needs pursue his labors even in this noontide heat of the season. The grain and hay harvests are to be gathered, and there is strong temptation, under the pressure, to overtask the strength. But this should not be allowed, and, thanks to the inventive genius of our countrymen, the temptation will soon be removed.

THE MOWERS AND REAPERS,

moved by horse power, are rapidly multiplying, and every year gains new triumphs. See how majestically they sweep down the waving grain, and the tall grass! Why should you still put your strength against that of your horse, and swelter in the noon-day sun? Has not the time come, on this Fourth of July, when you may celebrate your independence of the scythe and the cradle, and henceforth tax horse-flesh to cut your hay and grain?

PROVIDE HAY CAPS.

These are not only a safeguard against wet hay, but against over-taxing your

strength. There is then no need of haste in raking or pitching hay. Put up in cock, the hay will wait in safety for the sunshine, to go into the barn.

DO NOT MAKE YOUR HAY TOO MUCH.

Many err in this respect, and waste the sweetness of the grass upon the desert air. Clover is particularly damaged by too much sun. Cut it in the morning, and let it lie in the swath until the middle of the afternoon. Then turn it upside down. The next afternoon gather it, with a three-tine fork, into cocks, and let it remain two nights more, when it will be well cured, without losing the leaves from the stem. Clover, cured in this way, is more nutritious, and better relished by cattle. Read, however, the special chapter on "Hay Caps."

DO NOT FORGET TILLAGE

in the midst of the hay harvest. The corn and potato crops are very much increased by frequent hoeings. Improve cloudy days to run the cultivator between the rows, until the corn gets too large to admit the horse. The fourth and fifth hoeings of the corn-field pay as well as the second and third. You will have extra grain to pay for the labor.

SOWING TURNIPS.

You remember the old adage—

"the 25th of July
Sow turnips wet or dry."

We should omit the dry, and sow any wet spell, a little before or after. In moist seasons, turnips are a good crop, and are usually produced with less labor than most other roots. Do not fail to sow the seed of the flat or cow-horn turnip, at the last hoeing among the corn. The shade of the corn will give them a good start, and if the corn be cut up by the middle of September, you will have roots cheaper than by any other process.

ABSORBENTS FOR PUTRID SUBSTANCES.

At this season of the year, when various animal and vegetable substances, in a state of decomposition, accumulate about one's premises, it is important to have some means at hand to deodorize them. For sink-drains, cess-pools, and the like, lime answers a good purpose. We, however, prefer powdered charcoal on some accounts, especially if it is desired to absorb and preserve the fertilizing properties of the offensive substances. If the soap-suds, dish-water, chamber-slops, and all the refuse matters commonly thrown out the back-door, could be carried into a vat and saved, the manure so made annually, would be of great value. To absorb the liquids, and prevent unpleasant smells, the vat should have at the bottom a layer of peat or dried turf; after this has become well saturated, a coating of pulverized charcoal should be added. In a short time, another layer of peat should be thrown in. Plaster may also be added, and if this does not absorb all the odors, the compost should receive an occasional sprinkling of chloride of lime, and as a last resort, lime itself.

Keep all kinds of plants under glass, as close as possible to the light.

CALENDAR OF OPERATIONS.

JULY, 1857.

[We note down a summary of various operations, many of them very common ones, it is true, but a simple catalogue like this will often suggest a piece of work that would otherwise be forgotten. The Calendar is adapted to the latitudes of 40° to 43°. A little allowance must be made for each degree of latitude—later north—earlier south. This table will be made out anew every month, and adapted to the season of each year.]

EXPLANATIONS.—The letters, f. m. l., refer to first, middle, and last of the month.

Doubling the letters thus: ff., mm., or ll., gives emphasis to the particular period indicated.]

FARM.

We have now come to one of the most hurrying months of the year. Not only are our labors heavy, but the hot weather is relaxing and depressing to our spirits and health. Caution, moderation and temperance in labor, food and drink, should be observed, while engaged in the hay and harvest fields. We have elsewhere recommended horse power to cut the hay and grain on large farms, where practicable. One man with a good machine and a pair of horses, can cut more than six men during the same time, to say nothing of the spreading. Scythes and cradles will not, however, wholly yield to machines for a few years to come. Although the chief business will be harvesting hay and grain, there are other things which need looking after upon the farm, foremost among which is Buckwheat, to be sown early this month, which is the best time to ensure entire safety from frost. See article on another page.

Bark for Tanners will continue to "run," and may be peeled at any leisure time during the early part of the month. Cord or pile up former peelings now dry.

Bees—Watch late swarms, and in most cases return those coming out this month to the parent stock. Read "Apiary" and "Wonders of the Bee-Hive" in the present number.

Butter and Cheese—Read chapters on another page.

Cabbages for Winter may be planted in the field at almost any time during the month, but better by the middle. Put them out among early potatoes, and after the first crop of peas. Hoe former plantings, and make good any failures.

Corn.—Sow or drill ff. for soiling. Plow or use the horse hoe among early plantings ff. See work for the month.

Cotton at the South will receive its last working previous to harvest.

Fences—Have an eye to them, before cattle discover the "weak points."

Haying is the work of this month at the North. See several articles on the subject in this number.

Hay Caps—Provide ff. if not on hand. See article.

Hoeing should not be neglected, although other work will take the precedence. Hoes may be plied during cloudy days, and while the mowing machine is at work in the morning. Remember that weeds will still start up and ripen seed if not "nipped the bud."

Hogs—Keep from streets, roads and yards. They may properly have the range of an orchard or small pasture. Where shut up, give grass and weeds, keeping their pens supplied with muck, turf, &c., and let them help pay their way by making manure.

Manures—Continue to increase these not only in the hog pens, but in cow yards and compost heaps, by adding muck or swamp mud with a little plaster. Scrape the droppings in the stalls and cow-yards each morning and compost with muck under cover. Keep the yards and heaps free from weeds going to seed. Wet down, or fork over the pile, mixing plenty of muck if there is fire-fang.

Millet—Sow ff. m. for soiling.

Oats—Cut ll. if ripe. Bind and house or stack without their getting wet, if possible. The straw will make valuable fodder. If left in the field long, the "hay caps" will be highly useful in preserving the straw.

Pastures—Change from cattle to sheep and horses often. See that they are not fed too close.

Poultry—Give them a yard if not a wider range, as they will not do much mischief this month, except among the smaller fruits of the garden, and in the grain fields, from which they should be excluded. Read article upon varieties on another page.

Potatoes—Keep free from weeds. Early plantings will be ready for use m. l., and the ground may be sown to turnips or planted with cabbages.

Rye—Cut f. m., or as ripe.

Sheep—Guard from dogs by pasturing with one or two horned cattle, which will often keep dogs from the lot. Better, however, put a small bell upon several animals, the sheep killing dogs prefer to take their meals in quiet, and fear the call of bells. Supply sheep with salt once a week.

Sugar Cane—Seed of the Chinese may still be sown ff. for forage. Cultivate and hoe former plantings.

Tobacco—Top or nip off the upper growth. Keep the ground light and free from weeds.

Turnips—Sow Ruta-bagas and Swedes f. m. l. Flat or Cow-Horn varieties may be sown at any time during the month, and especially among corn at the last hoeing. Read directions in another place, and put in a good supply for Fall and Winter.

Wheat—Cut m. l., or as soon as the kernel has hardened from the dough state. Pick out all foul stuff from the seed patch. Read article on early cutting.

ORCHARD AND NURSERY.

The principal business of the Orchardist during this month will be pruning, thinning and gathering early fruit. Cherries, Peaches and the earlier Apples and Pears, will furnish his table with abundance of delicious fruit, as the season promises a plentiful yield. The Nurseryman will find sufficient to keep him busy between plowing among trees, pruning and

Budding Seedlings, the season for which is now at hand in this latitude. The different kinds of fruit usually require budding in the following order. Plums, Cherries, Apricots, Pears, Apples, Quinces, Nectarines and Peaches, although difference of soil and situation will sometimes hasten one and retard the other. Read directions for budding on page 161 of present number.

Caterpillars—Destroy the second brood as recommended last month on page 135. Keep small torches burning near the ground ff. to entice and destroy the moths.

Cherries—Early varieties are already ripe and the crop will extend through the month. Use care in gathering not to break the limbs or start the bark under heavy boots.

Fallen Fruit—Gather all kinds and cook to destroy the insects, unless swine or other animals are allowed the range of fruit grounds.

Grafts—Loosen any bandages which are cutting into the bark, and rub off suckers.

Hoeing—Continue in Nursery grounds, and keep grass and weeds from growing about standards in the Orchard.

Insects—Destroy ff. according to the directions of last month, keeping the torches there recommended at a distance from the foliage.

Layering and Inarching may be commenced this month. Full directions will be given in the next number.

Manure—Apply in liquid or other form to those trees which are loaded with fruit.

Pears—Trim lightly, retaining side spurs, and bud m. l.

Plums—Gather fallen fruit and continue to war against the curculio. Bud ff. m. Round off stalks budded last season.

Pruning—Attend to m. ll. For full directions see page 160.

Quince Trees—Prune and bud with Pears, using only those kinds known to succeed upon the quince stock. Insert the buds as near the root as possible.

Stones or Pits—Collect from fruits as they ripen, and plant at once, or put in boxes of earth. If thoroughly dried they will not vegetate with certainty.

Thinning fruit will be necessary on young trees. It is not best to allow trees planted in the Spring to perfect any fruit the present season. The fruit of large trees which have set a heavy crop should be thinned if good size is desired.

Vines—Prune and layer those under cultivation in the Nursery.

KITCHEN AND FRUIT GARDEN.

Between harvesting and marketing the early crops, sowing for late, weeding, thinning and hoeing, the gardener will find sufficient employment for the month. It is not too late to plant many of the vegetables of the kitchen garden. Some of them will succeed better now than planted much earlier, and as the soil is in good condition for the vegetation of seeds, no ground should remain unoccupied through fear that it is too late to plant. A wet Spring is often followed by a dry Summer and the present is quite likely to be such. Frequent and deep stirring of the soil is the best means of counteracting drouth. Dews, also, have more beneficial effects upon a well pulverized, than upon a compact soil.

Asparagus—Omit cutting, but keep down weeds.

Beans—Kidney dwarfs and six week beans may still be planted ff. See that running varieties are provided with poles.

Beets—Sow ff. for winter crop. Hoe early crops f. m. l. Cabbages—Plant ff. especially between rows of early potatoes.

Carrots may still be sown ff. Thin, weed and hoe f. m. Celery—Plant out full crop in trenches ff. m. watering and shading from the hot sun.

Corn—Plant sweet ff. for late use. Hoe early plantings. Cress—Sow ff. m. for succession.

Cucumbers—Plant ff. m. for pickles. Egg-Plants—May still be planted ff., shading from the sun and watering if the weather is dry.

Fruit—Thin and support over-loaded or weak branches and vines.

Gooseberries—Keep the soil loose and well mulched. Dust with sulphur if affected with mildew.

Grapes—Continue to rub off superfluous shoots, and nip back fruit bearing branches. Destroy caterpillars by hand picking. Read chapter in present number.

Herbs—Many of these will require gathering this month. Cut when in flower, dry thoroughly, and pack in tin cans or dry boxes.

Hoe—Counteract the drouth, which often occurs during this month, by thoroughly stirring the soil and hoeing up the weeds which would otherwise appropriate moisture.

Insects—Continue to use night torches and open bottles of liquid to destroy any that are left.

Lettuce—Sow f. m. l. Thin and use former plantings. Marjoram—Gather and dry m. l.

Melons—Plant ff. for mangoes.

Onions—Sow m. ll. for sets to plant next spring.

Peas—Sow f. m. l. for succession. Bush or string former sowings. Clear grounds which have perfected their crop and replant with peas or turnips.

Potatoes—Hoe and weed. Early plantings will come off m. ll. and the ground may be used for cabbages or turnips. Lift vines of sweet varieties unless seed tubers are wanted.

Radishes—Sow f. m. l. among other crops. Salsify—Hoe and thin.

Seeds—Gather as ripe, and save with care. Label and date them that their age may be known at any future period.

Spinach—Sow ff. m. for Autumn crops. Use former sowings, saving sufficient for seed.

Squashes—Early varieties may still be sown. Protect from bugs with flour and black pepper, or cover with cotton. See another remedy in present number.

Strawberries—Clip runners if hill culture is desired. Keep grounds free from weeds.

Tomatoes—Plant out f. m. for late. Stake or bush early ones.

Transplant cabbages, tomatoes, eggplants, &c., during damp weather if possible. See directions on page 162.

Turnips—Sow Ruta Bagas and Swedes ff. m. Flat and Cow horn varieties may be put in m. l. Sow wood ashes or dry lime on them as soon as up to protect from the garden flea. Read chapter on another page.

Water—Give plants newly set out.

Weeds—Collect and carry to the hog or manure heap. Allow none to sow their seeds for a future crop.

FLOWER GARDEN AND LAWN.

The flower borders should present an attractive appearance during the entire month. In addition to many of the perennials still in bloom, a succession of annuals will now supply the places of early flowering bulbs and herbaceous plants whose flower stalks have been removed. Pillar and other roses are now in profuse flower, while beneath them flourish countless varieties of plants in full bloom, conspicuous among which are Delphiniums, Dianthus, Campanulas, Phlox, Digitalis, Petunias, Verbenas, Pelargoniums, &c. Among the things to be attended to during the month is the sowing of

Annuals, a few of which may be put in ff. Weed and transplant those previously sown.

Box Edging—Clip ff. if neglected last month.

Bulbs—Many of the early flowering may now be lifted and dried. They should not be removed before the foliage has withered.

Carnations, Pinks, Picotees and Pansies—Continue to layer f. m. Those which are established may be removed l. m.

Dahlias, if previously started in pots or otherwise may still be planted ff. Stake and prune as they advance in growth.

Flower Stalks—Cut away as fast as they complete their bloom, both to free the grounds from unsightly objects, and allow room for annuals planted near them.

Geraniums—Make and plant cuttings of f. m. Gladiolus—Stake flower stalks ff.

Gravel—Hoe, weed and rake old walks, renewing where necessary.

Hedges—Clip with shears ff. plashing any open spaces. Hoe and Weed ff. mm. ll.

Insects—Destroy as last month.

Lawns and Grass Edging—Mow and shear f. m. l. Mignonette may be sown ff.

Potted plants from the houses will require the same treatment as last month. Water freely during dry weather, giving liquid manure occasionally.

Prune deciduous trees and shrubs f. mm. l.

Roses present a fine show at this season. Budding and layering should now be performed. Continue to use the whale oil soap mixture for the destruction of slugs and other insects, whenever they appear.

Seeds—Gather early ripening varieties and label with care.

Transplant annuals as per directions elsewhere.

Tulips—See Bulbs.

Verbenas—Layer for late blooming and house plants.

Water—Give to pot and other plants as necessary, applying it at night.

Weeds should not be permitted to grow in grounds allotted to flowers.

GREEN AND HOT HOUSE.

These will be comparatively empty at this season, a large number of the plants having been carried to open grounds. Those remaining will require plenty of air which should be admitted mostly through the top ventilators, else the current will produce a dry atmosphere.

Azalias—Should have sufficient air to mature the new growth.

Cactuses—Water freely.

Camellias—Shift to larger pots ff. m.

Cuttings of herbaceous and succulent plants—Make ff. m.

German Stocks—Plant ff. for winter blooming.

Grapes—See full directions on page 159 of present number.

Insects—Destroy by hand picking and fumigations inside, and syringings outside of the house.

Layer or Inarch f. m., plants which will not strike readily.

Oranges and Lemons—Bud ff. m. Thin fruit or remove blossom buds when enough has set.

Orchids—Keep dry and cool.

Pelargoniums—Continue to make cuttings of, heading in those done flowering.

Potting of cuttings, layers, &c.—Continue ff.

Prune plants done blooming, cutting back those designed for winter flowering.

Seeds—Gather as they ripen and label for future use.

Seedlings—Transplant or pot off as soon as they are of sufficient size. Shifting to larger pots may be done during the month. This is the most appropriate season for the change.

Syringe freely to dislodge insects and maintain a humid atmosphere.

Tie up plants to prevent their being injured by the wind, and screen them from strong currents.

Turn plants frequently to prevent a crooked growth.

Water—Give to plants both in and out of houses, selecting the evening as the best time. During heavy rains those plants inside should be shielded by closing the upper sash or turning the pots upon their side.

THE APIARY.

BY M. QUINBY.

In spite of all endeavors to the contrary, there will probably be some old stocks without queens at the end of the swarming season. The means of providing other queens for stock, will soon be past—usually by the middle of the month—I gave the directions in June. A queenless stock at this season, will speedily be destroyed by the worms, unless the colony is very strong. Watch them as they become weak, which will be in a few weeks, or months at most; they will continue their labor as others. But if weak, they should be broken up at once, and the contents saved; the bees united with some other weak stock or swarm having a queen; or, what is frequently better, break up the weak one having the queen and put the bees with the queenless one. This will not only save the honey and wax, but prevent the breeding of thousands of moths to infect other stocks.

The moth is particularly active this month; it will be likely to trouble all small swarms, as well as old stocks that have swarmed too much; these with proper assistance, can be often saved. In sections where diseased or foul brood, has appeared, the utmost vigilance is needed to prevent its spreading. All old stocks can be examined three weeks after the first swarm, better than any other time, as the brood left by the old queen will be nearly if not all matured in that time. To do it, blow some tobacco smoke under the hive, turn it over and look among the brood combs for sealed cells; if any are found, open a few with the point of a knife. When healthy they have the shape of the mature bee, but if diseased, are black and putrid. A dozen such should condemn a stock at once. Drive the bees into an empty hive to begin anew—no other course has been found successful.

To prevent a waste of young broods.—If any combs need pruning on account of age, it should be done about three weeks after the first swarm leaves the hive. To do it sooner would cause a waste of young broods which ought to be preserved. It should be remembered, however, that pruning is very seldom called for. Brood combs if not diseased, will do good service eight or ten years, even though they may grow black.

Examine the boxes on the hive, every few days. Put empty ones in the place of full ones, as fast as finished—do not compel the bees to be idle for want of room a single day during a yield of honey.

To preserve the honey till cold weather, it must be secured from the mice, ants, &c., and kept in a dry place at any rate, and cool if possible. Such boxes of honey, must be examined every few days, to see if any moth-worms hatch out—should any appear, they may be destroyed with the fumes of sulphur.

FARM SURROUNDINGS.

NUMBER V.—POULTRY.

Having for the present disposed of the quadrupeds, although we may touch on another variety or two hereafter, we will now look at the poultry. In proportion to the comforts and conveniences—luxuries even—that they yield to the household, no living thing that you keep gives more satisfaction, or pays better, *when properly accommodated*, than the poultry department. To the eye, when tastefully selected, they are objects of beauty. Their domestic habits are studies of interest, and their whole course of life, to an appreciating mind, is a pleasant subject of observation. Occasional annoyances will come from some untoward cause, or another, but on the whole no country place can be complete in its decoration, or its inhabitants without them. We shall, therefore, proceed to discuss them in their comparative order of utility and interest.

First, then, is the chicken, or barn-door fowl. In the selection of these we are not fastidious as to breed. All the different breeds have their virtues, and some their vices. We are not a chicken fancier, nor a chicken trader, have no wares of the kind to vend, and therefore, with many years of experience in different varieties, think ourselves competent to judge somewhat of their several merits. We have passed through the recent years of a raging chicken fever without contagion, visited all the varieties of patients and the type of their maladies, looked into their nurseries and hospitals, made our own observations, came out unscathed, and learned—something. Indeed, we have attended sundry assemblages of consultation on severe cases, prescribed, as an amateur, for relief, and administered advice in some paroxysms of extremity. In short, we profess to know somewhat about poultry. Let us look then, at the chickens as we find them around us.

The large Asiatic fowl in its several cognomens, not necessary here to enumerate, we class as of one general breed. Their varieties are many, but they have one general character in common, of great size, late maturity, thinly feathered, rather unfitted in constitution for a cold climate, and, without extra care, an unfitness for common, every day uses. They comprise specimens of the very best and the very worst of their kind. We have seen them large, grand and beautiful in size, figure, proportion, and color—personating, in fact, the *beau-ideal* of a majestic fowl. Again we have seen them as devoid of grace and comeliness as a sand-hill crane, and not a whit more useful to run about the premises—a nuisance anywhere. But, as we shall not dispute about tastes, we will not further discuss them. From these, and their admixture with the common dunghill fowl, have grown several other varieties which their admirers have dignified with names, and called them “breeds,” meaning nothing, in reality, but mongrels and crosses, and they of varied utility.

Next to these in size, but holding no parallel with them otherwise, is the English

Dorking—the most perfectly formed, and the *very best* fleshed fowl we know. But from a long course of nice breeding in the mild climate of Southern Britain, they are thinly feathered, and not robust enough to withstand our harsh extremes of season. No bird of the farm yields such a deep, well fleshed breast, or so savory and well-meated a side-bone, nor a better egg; but they require snug housing, and extra attention to keep them up to the mark in breeding. They are more subject to the roup—a hateful disease—than any other, yet, when well cared for, pay for their trouble. In plumage they are beautiful, and in all otherwise, a *perfect* fowl to look upon.

A third variety is the game fowl, old as Egypt, and in all ages downward an object of barbarian pastime and cruel usage, and, like the equally ferocious bull-dog, instinctively and of choice, contributing to the brutal tastes and passions of their masters. In grace, plumage and action, they are equal to any others, and superior to most; and well-fleshed, prolific and hardy. They know no fear, and avoid no danger. Yet they are not a pleasant bird to have about you. They quarrel with every other fowl upon the place, and for want of these they quarrel with each other, cocks and hens alike. An occasional cross of the game upon other deficient varieties may give them stamina and hardihood, but otherwise we could not keep them. Thus, it will be seen, we are no abettor of the cock-pit.

We have named three prominent breeds; and there are many others which we might name, as the Black Spanish, fancy-bred, delicate and beautiful, but unprofitable; the Creole, or Bolton Grey, a compact, fine, small prolific bird; the Poland, with an enormous white tuft upon the head to contrast with a shining black body, tender to rear, prolific in eggs, and inferior in flesh; the beautiful small fowl of the East India Islands, called Sumatra game, of the brightest plumage and most graceful form, yet too tender and delicate for our climate without extraordinary protection. There are others, also, which are to be found in the poultry books, and which may please your tastes. But some are mere humbugs, got up by the chicken fanciers to get your money, and worthless as an economical housekeeping hen, or even a thing of well-regulated fancy. If you, like ourself, have gone through the entire calendar of chicken variety, you have probably by this time made up your mind what to keep in that line, and need none of our advice. But, if not, and only want a good every day hen, one that will give you an abundance of eggs, will breed you a brood of hardy chickens, early fit for the table, and well-fleshed always, we advise you to mark our description of what a nearly perfect chicken is, and then get more or less of them as soon as you can, regardless of what variety they are called, and commence your poultry keeping.

A well conditioned barn-door fowl should have a small head, with either a single or double comb of good size, a short, strong beak, a quick facile eye, without any feath-

ers by way of tuft. The neck should be short, light, and well feathered. The body deep, long and broad, full-breasted and compact, of course, and the more brilliant the plumage, of whatever color it may be, the better, as it is a sign of hardihood. The tail should be of moderate length, and full in feather. The legs short and muscular, and their hue flesh color or yellow. We dislike blue or black legs. They are signs of hardship, but of bad looking flesh. There is a want of delicacy about it with such legs. The cock should have a corresponding figure, brilliant plumage, and a proud and portly bearing. He should not be a coward, nor yet a braggart, but a manly protector to his family. In selecting young stock birds always keep the *best*, discarding everything tending to effeminacy in either sex, and if they decline in stamina, introduce a new cock into the flock, of such quality as will continue, if not improve their good qualities.

There is still another interesting family of the chicken department, especially if there be children in the house, that should not be omitted. It is the Bantam. We do not mean the little fancy thing called the Sebrights or Javas, with their buff feathers, black edged, or coal black plumage, for they are hard to obtain and troublesome to keep up to the mark in fancy requirement. Still, if you like these, and can breed them in their purity, they are well worth the pains you take for them; but we mean the beautiful little, sociable, feather-legged, common white Bantam, which inhabit the tenements of the washer-woman, and laboring people of our large cities,—New-York, Philadelphia and Baltimore. They are the most domestic little house-keeping creatures imaginable. They love the companionship of children, as well as the puppy, or the kitten; will follow them all over the house, if they are permitted; will make their nests in the cupboard, or coal scuttle, the cradle or rocking-chair—your hat even, if you lay it down right side up—and cackle as triumphantly over their little egg as the proudest matron of the farm-yard. Through twenty years of our child-rearing experience, with their little joys, and their transient sorrows, the children kept, and loved, and enjoyed their Bantams, always cherished objects of their care and solicitude. If you have children, then, indulge them with the Bantams equally with the cosset lamb and the pony. You can do this even in restricted premises where you can keep neither of the others. How the little Bantam cocks do strut, and flap their wings, and crow, about once a minute all day long.

Further than what is above written we need not discourse in the chicken department. For all the manipulations touching their care and education, we commend you to Bement's Poultry Book, a new and improved edition, of which the Harpers' have lately published. He will describe to you all the breeds which are worth knowing about, and some, also, the less of which you know the better; and as the author is a long-time friend of ours, and understands the business of poultry in all its departments, we

name him as sound authority, untainted with the trickery of the trade, and in the study of whose pages you will come out "a wiser, if not a better man." We shall talk of other poultry matters hereafter.

MECHANICAL PREPARATION OF THE SOIL.

NO. IV—DRAINING.

[Continued from page 126.]

Owing to the great diversity of arrangements found, in both surface and sub-soils, as illustrated on page 126, it will be readily seen that no arbitrary or general rules can be given for deciding whether any particular soil needs draining or not. This can only be ascertained by a *special examination in every case*, and this examination must usually be made by the cultivator. Because the surface soil *appears* to be dry, it should not be at once concluded that it may not be *profitably* drained. The tests, given in the middle column, page 125, should be applied, keeping in mind the principles stated on page 101, and also on pages 124-5.

Let us examine more particularly some of these general arrangements of soils.

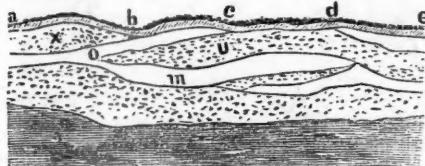


Fig. 1.

In this figure, *x* and *u* represent loamy or gravelly soils, supposed to be porous enough to allow water to settle rapidly away. Yet even here the clay beds, *o* and *m*, may be so near the surface as to prevent the escape of the water except by evaporation into the air. In such a case, it is evident that but a few inches of the surface will be dry. Sinking a hole three or four feet, and finding it free from water two or three days after a soaking shower, will furnish the only proof that there is sufficient *natural* drainage. We wish it kept in mind that the sections of soil represented in all the cuts may be only a few feet or rods in extent, and they may *each* extend several miles. Every field upon your farm may have half a dozen alternations of wet and dry soil, or your whole domain may perchance lie wholly upon *one* of these plots. If you dig a well, the chances are that in going down fifteen to thirty feet you will pass through half a dozen varieties of loam, clay and gravel. If in a level country, the different beds of soil will most likely lie horizontal, though this may not be the case, for it not unfrequently happens that a level surface is found upon just such an arrangement of sub-soils as that shown in fig. 1 or in fig. 5. If in a rolling, hilly, or mountainous region, though on a flat plateau, or in a valley, the probability is that the strata or layers of soil are anything but level or uniform. It may be stated, however, that there are very few flat or level sections of the country, in which large beds of clay are not found immediately below, or at most a few feet be-

low the surface, and when near the surface, they form an effectual barrier to the free descent of water. But the great majority of our farming lands are either *rolling*, or situated upon the sides of valleys or mountains.

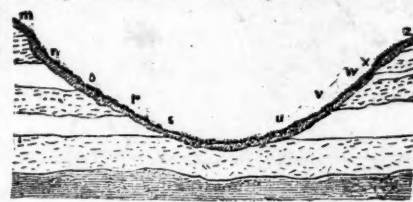


Fig. 2.

In figure 2, for example, we may suppose the distance from *m* to *z* to be two, three, five, or ten miles, while the depth of the hollow or valley may be but a few hundred feet. If your farm chances to lie in the valley somewhere between *s* and *u*, you have an open subsoil through which the water may sink down and run off to the left, perhaps to reappear in springs or swamps many miles distant.

Here then, though in the lowest part of the valley you have comparatively dry land, while on either side of you, your neighbors located between *r* and *s*, and between *v* and *u*, are upon clay land from which the water must run over the surface until it finds a porous soil at *u* or *s*. The same will be the case with the farms located between *n* and *o*, and between *x* and *w*.

Now examine a farm located between *o* and *r*. The rain falling between *m* and *n* will sink down, leaving the surface dry, but it will be stopped by the clay bed between *n* and *o*, when it will ooze out at *n* (perhaps forming a spring at that point). It will gradually sink away from the surface, and the result will be that all through the season, the upper portion of the surface will be kept wet or moist, while lower down the middle portion will be dry, and then at the lower part near *r* the water having been stopped by the clay between *r* and *s* will run or ooze out at *r*, forming another wet spot, and the surface between *r* and *s*, and a little below *s*, will be wet and cold at all seasons.

These explanations show why it often happens that there is a succession of wet and dry farms one above the other, right upon a hill side. There are multitudes of just such instances all over the country. Though the cause may not have been known, every one must have observed that there is a difference in the fertility of adjacent farms upon the same general slope. Let it be remembered that in the cut we have magnified the inclination, and that the illustration holds good even when the distance between *m* and *s* is so great and the fall so gentle that it will hardly be noticed by the casual observer. All the illustrations will hold good if the descent from *m* to *s* be just enough to produce a gradual flow of water in the soil or in a running brook.

But suppose the descent be rapid, and the distance between *m* and *s* be so short that a single farm, or even a single field, cover the whole side of the valley, and there be but a few feet or rods between *m* and *o*, *o* and *r*, or *r* and *s*. In this case the same farm or

field will exhibit an alternation of wet and dry soils, and the portions between *n* and *o*, and between *r* and *s*, will need artificial draining.

The same reasoning as the above holds good in examining the sides of a mountain, hill, or rolling surface, as illustrated in the following figure:

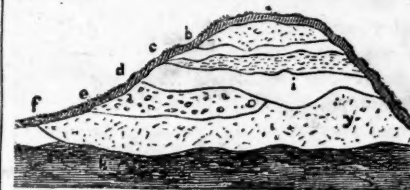


Fig. 3.

Here the upper layer may be a bed of clay, gravel or sand. If sand it will drain itself, but the water will be stopped by the clay bed between *b* and *c*, when it will run out and over the surface, and sink down at *c*, and perhaps settle off to the right and come out upon the right side. Between *c* and *d* the soil will be naturally wet; between *d* and *e* dry, except at the upper part, near *d*. Between *e* and *f* it may be wet or dry, especially near *f*, since the bed of clay shown just below *f*, and the rock *k*, may form a basin to hold the water when it will escape at *f*, in the form of a spring, or perhaps ooze out, producing a wet spot or swamp. As described above, under fig. 2, if the distance between *b* and *f* be great, there may be a succession of wet and dry farms, or parts of farms, or, if the distance be short, a single farm or field may embrace all the varieties of soil shown, and even many more alternations.

That these successive beds of clay, sand, gravel and loam, actually exist, must have been observed by most persons who have seen a well dug, or an excavation made for any purpose. We frequently dig into the side of a hillock to get at beds of sand for building purposes, and often find this, or even smooth washed gravel, above, or below, or between beds of clay. Let us examine the next figure:

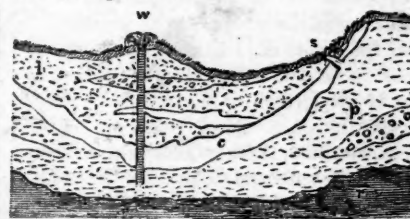


Fig. 4.

Here we have a gravelly or loamy soil, *l*, resting upon a clay basin, *c*, and below the clay another porous soil, *p*, which lies upon the rock, *r*. There are smaller beds of coarse gravel and of clay in each of the larger loam beds. The upper bed, *l*, may be of such depth and extent, and character, as to absorb most of the rain falling upon the surface, and return it gradually to the atmosphere. The bed, *p*, may be a water-bearing strata, extending far off to the right. The clay bed, *c*, will keep its water from ascending into *l*. If there chance to be a natural fissure or opening at *s*, through the clay, the water will perhaps flow through it, and produce a living

spring at that point, as there is always an unfailing supply of water in *p*.

Suppose now at *w* a deep shaft or well be sunk down through the clay bed into the water-bearing strata, *p*. It is evident that the pressure from the higher ground, on the right, will cause the water to rise up and overflow at *w*, even though the ground at that point be much more elevated than the country immediately around it. This water may come from many miles distant under the impervious bed, *c*, and there may be a sufficient supply of it to keep up a large and constant overflow at *w*. Such arrangements are by no means uncommon in various parts of the world. These living wells are called *Artesian wells*, from the circumstance of their having been first discovered, or their being most numerous in *Artois*, France. They can, of course, only exist where there is higher ground at a greater or less distance.

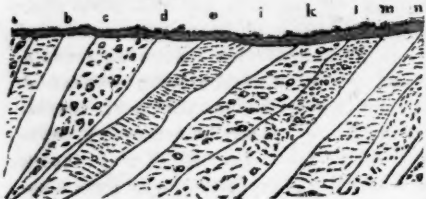


Fig. 5.

This illustration was, perhaps, sufficiently explained at page 126. We introduce it again, however, to refresh the memory, and add a word more in reference to the frequency of this arrangement of the soil, and the importance of thoroughly studying it. Place several pieces of different kinds of cloth one upon the other, taking thick and thin pieces of each kind, and put heavy weights upon several points. Then apply pressure upon the sides of the flat mass. The mass will be thrown into irregular shape, here an elevation resembling a hill, and there a depression like a valley. Now, with a sharp cutting instrument, pare or shear off some of the elevations to form a flat surface, and we shall see upon the sheared portion the edges of the different kinds of cloth lying side by side, much like the layers of soil represented in fig. 5. A similar arrangement would be produced if under the layers of cloth we thrust any substance to raise it up at different points, instead of producing the elevations by compressing the sides. Now, as before intimated, pages 125-6, there is abundant evidence that both the soils and rocks upon the earth's surface have been originally deposited from water in beds or layers, (strata,) like the layers of cloth, and that volcanic pressure from beneath has tilted up and displaced these beds, so that we find them in all positions, sometimes lying nearly flat, and sometimes standing almost on the edge, as shown in fig. 5. Much the greater portion of the earth's land surface is rock, formed of hardened materials, which were originally in a fine state—sand stones, for example, being masses of coarse or fine sand turned to stone. Our soils proper, are merely pulverized portions of the upper parts of these rocks, and their characters and composition depends upon the kinds of rocks out of which they were formed. The best soils

are usually those formed from several kinds of decayed rocks, the materials having been washed together by water. These are called *diluvial* soils, or if formed by moving water now or more recently acting, they are called *alluvial* soils. The upland loam soils are examples of the diluvial, having been formed of mixed masses of clay, sand, washed gravel, &c. The rich, recently formed soils upon the banks or in the valleys of streams, are examples of the alluvial. So the dark rich mud washed down from higher land into swamps or low lands, may be called alluvial.

Before leaving this topic, we may remark that a thorough geological examination of a section of any country, by competent men, furnishes most important information to the cultivators, in regard not only to the origin and character of the rocks and derived soil, but also in reference to the succession and inclination of the various beds of clay, sand, gravel, &c. Farmers are, in the end, the class by far the most benefitted by geological surveys, and we hope they will at all times second, and encourage any project for making such surveys, under the legislative authorities of the different States. A million, or two or three million dollars, expended in such a survey of any State or Territory of our country, would be of the highest value to the agricultural interests, while the expense would be shared by all kinds of taxable property. We hope yet to see such a thorough geological examination of every township, that every one can learn from looking on a map embodying the results, what is the character of the soil, how the beds of different kinds of rocks and soil are arranged together, what is their dip or inclination, what portions need draining, how the drains should be placed to be most effectual, &c. Geology promises to throw much light on all these practical questions.

Having thus discussed the arrangement of the soils on the surface of the earth, and the reasons for draining most of these soils, or the advantages arising therefrom, together with general rules for examining any portion to ascertain the probability of its needing draining, we will next proceed to the closing topic, viz.: *The methods of draining.*

GETTING RID OF ROCKS OR BOULDERS.

Where these are too large to drag out on a stone-boat, and yet are not absolutely immovable, it is an excellent plan to dig a large deep hole close to one side, and then roll them into it by levers. When this cannot be done, build a fire of brush and old rails on the top of the rock, and the expansion caused by the heat will soon split off large fragments. Remove these at once, with a crow-bar, and then renew the fire on the remainder, and so proceed until the whole nuisance is abated. A more sudden and prompt effect is sometimes produced by removing the fire after the rock has become highly heated, and dashing on a few pails of water.

LIGHTNING RODS.—Should be put up before the barns are filled with fresh steaming hay or grain.

WHEN TO GATHER CROPS.

This is an important topic. To cut grass when it is "ripe," and grain when ready to shell out, is far from economy. Careful observations and experiments, as well as chemistry, teach us that all grass and grain crops, to be consumed as food for man or beast, should be cut down before maturity. Many of the roots, also, are better for premature gathering. Potatoes may well be ripened in the ground; and, were it convenient to make the separation, we should say let grain, designed only for seed, remain upon the native stalk, in the field, until nearly ready to fall off. As we have said, experiments carefully made have proved conclusively that wheat, for example, if cut six to twelve days before full maturity, yields not only a greater bulk and weight, but more and better flour, than if allowed to stand until "dead ripe." We have frequently published the direct trials which have established this fact, and will not take space to repeat them here. Let us look a little into the reasons for such a result. It will not be disputed that a pound of gum, or sugar, or starch, is better food than the same amount of wood or woody fibre. Much the largest proportion of the nourishment of wheat or corn, or other grain, is derived from the starch it contains. More than three-fourths of the entire bulk of wheat flour, for example, is really pure starch. The same may be said of corn meal. But all grains contain more or less of woody fibre, in the shell.

Wood, sugar, starch and gum, are composed of precisely the same *elements*, and these are nearly in the same proportion. The difference in form and properties is chiefly in the arrangement of the elements. Yet wood is nearly indigestible, and of course fails, in part, to yield nourishment, while sugar, starch, and gum, are easily digested, and almost their entire elements furnish nutriment.

Examine grain in the milk, and it will be found to consist almost totally of starch, gum and sugar, the abundance of sugar giving it a sweetish taste. Let this grain ripen, and the starch, gum and sugar, are hardened, and in part changed to woody fibre, that is, husk or bran. But cut the grain while scarcely out of the milk state, and you stop the natural change into woody matter, and thus secure a larger proportion of the desired starch, sugar and gum. It is well known that the earliest flour made from first-cut grain possesses a peculiar sweetness. Corn picked while still soft, and dried, retains its sweetness. The only point to be looked to is, not to cut grain before it attains its full development of material. This point has been found to be just at the period when it commences hardening. No grain should be allowed to stand a day after it becomes so solid as to require a gentle pressure to crush the kernel between the thumb and finger-nails. This rule applies to wheat, oats, corn, and indeed to all cereal crops. Gathered at this time, which is usually eight to ten days before perfect ripening, there will not only be more and better nutriment, but the yield of grain, and espe-

cially of flour, will be from five to ten per cent. greater, and often more, than if the cutting had been deferred ten days.

The decidedly superior value of straw cut green, is another important item to be taken into account. The increasingly high price of hay, and the advance in the demand and value of stock, render it important to give more attention to the preservation of straw. Wheat or oat straw, and corn-stalks, if left standing until fully matured, are little better, and little else than so much wood; but stop the ripening process as soon as it is practicable to remove the grain, and you secure straw and stalks worth one-fourth to one-half their weight of hay, as the latter is ordinarily cured. Would it not be better to run the risk of getting a few pounds less of grain by too early gathering, if thereby you secure a greatly superior quality of feed in the straw?

The reasons for cutting grain early apply with equal force to all crops gathered for forage. Taste a stalk of grass just as it is losing its flower and you will find it sweet, succulent and tender. A few days afterward, it is more like a dry piece of wood. But cut it down at the former period, dry it in small masses to prevent heating and fermentation, and it will retain much of its sweetness, and contain a large proportion of the sugar, starch and gum. We state an undeniable fact, one established by rigid experiment, that *four* tons of hay gathered just as the flowering season is over, will yield more *nourishment* than *five* tons gathered ten to twelve days later. We have the best authority for saying that one acre of grass, which, when cut fully ripe would yield 1,000 pounds of digestible nourishing matter, and 2,000 pounds of woody fibre, will, if cut 10 to 12 days earlier, yield from 1,500 to 1,800 pounds of nourishing material, and only 1,200 to 1,500 pounds of woody fibre. We will not stop to estimate what an immense saving would be effected to the country were the principles above stated thoroughly understood and practiced upon.

GAS TAR.

We wonder that this article is not more generally used as a paint, in all localities where it can be obtained. Its usefulness for coating the lower ends of fence-posts, and all wooden structures exposed to moisture, is very great. In the preservation of wood from decay, it is necessary that the oxygen of the atmosphere should be excluded from it, and that the albuminous matters of the sap should be coagulated. Precisely in proportion as these two things are effected, will decomposition be retarded. No substance with which we are acquainted, helps to this result so cheaply as gas tar. As an illustration of its effects, it is stated that sleepers which had been saturated with this tar, and used in building a British Railroad, in the year 1838, have recently been taken up and found to be perfectly sound, while others, not so treated, rotted away in five years.

We have seen it used for coating the inside of eave-troughs, for painting iron railing and common wooden fences. It can be

used to advantage in painting carts, cowsheds, wagons, plows, gates, and all the iron work on the buildings, and implements of the farm. It will give them a neat appearance, and preserve them from decay. Horses will not gnaw any post or building to which it has been applied. We would not recommend it for painting dwelling-houses, front fences, or for any ornamental work. But for rear buildings, fences, tools, &c., it is just the thing. Its disagreeable odor, of which some complain, is only a temporary evil, and its dark color may be relieved, we should suppose, by mixing with it whitening or yellow ochre.

When used, the material to which it is applied should be dry, and the paint should be hot, though not in a boiling state. In applying it to fence posts, it should be heated in large kettles, and the butt ends of the posts thrust into it. When used as a paint, it may be applied with a brush, in several coats. It can be bought in all cities and large towns, where gas is made from coal, at quite a cheap rate, generally from \$2 to \$3 a barrel.

HEAD-WORK IN FARMING.

It is surprising how much muscular labor is wasted every year, which might be saved, or better directed. This is true in all kinds of business, and not the least in farming. For instance: how many farmers toil on, year after year, with scanty or imperfect implements of husbandry. The modern improvements, which save much labor, and do the work cheaper and better, they will have nothing to do with. Improved varieties of seed, they hold to be, almost without exception, humbugs. Draining and subsoil plowing are ranked in the same catalogue: *they* are labor lost; but manuring cold, wet lands, and plowing them late in Summer a few inches deep, and gathering scanty crops—*this* is not labor lost! Rotation of crops, and manuring lands with reference to the grains or roots to be grown on them, they consider something like book-farming—a very dangerous thing!

We never could see why farmers should not think for themselves, and be able to give a satisfactory reason for every process they undertake. We never could see why they should not endeavor to improve in all farming operations, to learn the very best way of doing everything, and then to do it so. It is told of a certain backwood's farmer, who had not yet found time to clear the stumps from his fields, that his boys complained bitterly of their troubles in plowing and harrowing—the old-fashioned "drag" especially troubled them by its frequent overturnings while plunging among the stumps, and needing to be set right side up at every few rods. "Boys!" said the enraged farmer, one day, "take that harrow over to the blacksmith, and tell him to make all the teeth twice their present length, and sharp at both ends, and we'll see what that'll do!" The thing was done: the teeth now pointed both ways, like those of a revolving rake. "Gee up, Bill; now go along;" "But, father, it has upset again, as bad as before." "Never mind,

boy; go right ahead; it will work well either side up. See, now, what comes from a little thinking!" And sure enough, it did work, and the field was harrowed in spite of the stumps. We might have selected a more dignified example of the use of head-work, but this homely story will answer our purpose.

In the matter of rotation of crops, there is need of forethought and management. Some farmers neglect to manure largely, because of its expensiveness; they would like to underdrain more extensively, and to subsoil plow their lands, if these things did not cost more time, labor and money, than they think they can spare. But it costs no more to follow a good system of rotation of crops than it does to carry on a farm without any such plan. Yet such a system may bring the farmer three-fold greater and better crops. Nor in devising such a plan, has he got to depend entirely on his own experience or sagacity. Books and agricultural journals are at hand, containing the result of other men's experience, and all he has to do is to adapt such information to the wants of his own case. A very little head-work of this sort would pay well. It would pay in clean cultivation. Chess, red-root, quack-grass, Canada thistles, butter-cups, daisies, and what not, would hide their heads; and grubs, wire-worms, and all manner of insects, would rapidly diminish, if not wholly disappear. It would pay in the increased and prolonged fertility of the land, and in more bountiful crops.

A PLEA FOR SNAKES.

There is a vulgar prejudice against these reptiles, which, however easily accounted for, is both unwise and unprofitable. The common belief that the first tempter assumed the form of a serpent, is doubtless the original source of this almost universal dread of snakes. Every son and daughter of Eve seem to have a special license to bruise the head of all the serpent kind. All fear them, and all delight in their destruction, whether harmless or not. The venomous serpents are few, and the attacks of these are rarely fatal. The copper head, the rattle snake, and the moccasin, are troublesome animals, and we do not include them in our plea.

The large majority of the varieties found in our country, are not only harmless but positive helps to man in his cultivation of the earth. They are all insect eaters, and fairly earn their right to live, by the good they do. The black snake, the adder, and the striped snake are commonly found about our fields. Open the stomach of one of these fellows, and you will find it as well stuffed with insects, as that of the bird whom our legislators are careful to protect with the arm of the law. While the birds are laboring for man in the tree tops, and devouring the moths and slugs that prey upon the leaves of plants, the snakes are busy with the grubs that infest the roots. Their favorite shelters are old walls, stone heaps, ledges and neglected hedges, where insects resort in greatest numbers to deposit their

eggs. Here also the serpents breed, and cherish their young, using only neglected portions of the field. The dread, which man has of them is heartily reciprocated, and even the venomous, it is believed, only use their fangs in self defence. They never attack man, and are certain to be out of the way, whenever you want the ground for any thing else.

Ought not such unobtrusive helpers, in the cultivation of the earth, to have human protection? They are a part of that army of laborers, which Providence has raised up, to keep in check the insect tribes. It is because this army of helpers is so warred against, and exterminated by man, that the insects are multiplying so fast, and the fruit crop in the older states is endangered most every season. In the new settlements the birds, snakes and toads, and all the tribes that live upon insects are found in largest numbers. Here orchards always produce the finest fruits. But as settlers come in, and clear up the country they begin a war of extermination upon their best friends, and the insects multiply so that every fruit that sets in orchard or garden has a score of enemies waiting to puncture and destroy it. The balance, which Nature designed to be kept up between her several tribes of creatures is destroyed.

It is evident then, that the destruction of snakes, so common, is not only a foolish practice, but injurious to the best interests of the farmer. Why not let them share his protection, with the blue-bird, and the robin, the sparrow and the wren, and if necessary, have laws enacted to shield them from harm.

CULTIVATION OF BUCKWHEAT.

From what we have observed we think few farm crops have paid better than Buckwheat, during a few years past. There have, of course, been exceptions, in limited localities, but all that has been raised, has met with ready sales at good prices. We have seldom been able to purchase a good article of Buckwheat flour at less price than Wheat flour. Indeed, so high has the former been at times that Wheat flour of second grade has been extensively mixed with it. It is decidedly in favor of Buckwheat that it can be used as a make-shift, to fill in where from a late Spring or other cause it has been impossible to sow Spring Wheat, Oats, or other earlier crops. It may be sown in this latitude for raising grain as late as the middle of July, but we advise earlier sowing, say by the first of the month if not before, where it can be done as well at that time. For plowing under as a fertilizer, it can be sown from early Spring to the close of August.

Buckwheat (*Polygonum fagopyrum*.) is sometimes called *Beechwheat* from the close resemblance of its kernel to the common *beech-nut*. Its use for hot cakes, familiarly known as "flapjacks" or slapjacks is too well known to require description. The recently improved hulling mills for removing the black shell, has tended to greatly extend its use. It is also good for stock, pigs,

poultry, &c. In Europe and also in some places in this country, it is very extensively raised as food for bees. It is grown for fodder, and if cured in a green state, and stowed away in small stacks of two or three tons each, or in a dry loft, or on an open scaffold, and then steamed before feeding during the winter, or cut fine in a straw cutter, slightly moistened with water, and mixed with meal, it makes tolerably nutritious food for cattle and horses. Finally, it is also grown as a fertilizer, to be plowed deep under the soil when in blossom. Though not equal to clover for this purpose, still it enriches the land rapidly, and has the advantage of growing when and where clover will scarcely show its more delicate heads.

Soil and Preparation.—The best soil, undoubtedly, for Buckwheat, is a good, dry, light sandy loam; but it may be made to grow well in any soil if properly prepared. Fresh manure should only be applied to this crop when a growth of straw alone is wanted. When its grain is desired, dissolved bones is the best manure; next comes a mixture half and half of guano and bone-dust. We have seen fine large crops raised on the poor sandy soils of Long-Island and New-Jersey, by an application of ten to fifteen bushels of bone-dust per acre. Plow deep, sow the seed broad-cast, then the manure, then harrow well, and finish by rolling smooth.

Quantity of Seed per Acre.—If sown for a fertilizer or for fodder, put in one and a half to two bushels per acre; if for the grain, three-quarters to one and a half bushels per acre, is usually sufficient. Sow broad-cast, or in drills as most convenient.

Time of Cutting.—If for grain, cut as soon as the berry is well filled with milk, and before it gets very hard. Loss frequently ensues by letting it stand too long, for it is a grain that shells easily as the straw is turned in the field.

When wanted for fodder, cut just as it is going out of bloom, and cure the same as clover hay.

When plowed in for a fertilizer, do this in full bloom, and cover as deep and well as possible.

GAPES IN CHICKENS.

To the Editor of the American Agriculturist.

For a couple of years after commencing the raising of poultry, I was subjected to the loss of a large number of young chickens, and almost the whole of them by gapes. I inquired of an old lady, who has had great success in the chicken line, if she could tell what made the gapes. The reply was, lousy hens, and the cure, or I should say preventive, simply to grease the hens under the wings thoroughly, and around the neck as soon as she came off the nest.

Well, I tried it, and the result has been, the more I did not grease the hens the more chickens died, and vice versa. The whole matter, in my experience, is perfectly simple, and so far as practiced with my chickens, has been successful. When a hen comes off her nest with a brood, she is well greased, and from time to time, while confined to the coop, the operation is repeated, with occasional changes in the position of the coops. Should any of your readers try the experiment without a favorable result, I should be glad to know it.

DORRING.

TRY THE HAY CAPS.

For several years we have recommended these, and many of our long time readers have acted upon the suggestion. We doubt very much whether one of them can be found who would part with his hay caps for three or five times their cost, if they could not be replaced by others. But many have been wary of adopting the "new invention," and as we call to mind the fact that we have over 20,000 new readers this year, we are constrained to have another talk upon the topic. First then

How are they made? Get a piece of coarse cheap cotton cloth, the more closely woven the better. Let it be 1½ yards in width, if you can get that width conveniently, or if it be only 1 to 1½ yards in width, it will answer, though not quite so well. Cut it into square pieces, and with a strong twine tie a wooden pin upon each corner. The pin may be about a foot long and an inch in diameter at one end, and sharpened to a point at the other. It may be a little better to hem the torn or cut edges, but this is not necessary, they will unravel very little. The pins are most readily made by sawing a straight grained inch board into foot lengths, and splitting it into square pieces. These can be whittled to a point with a knife or draw-shave, and with a knife or saw cut a notch or groove around the blunt end to tie the twine into. You can cut the cloth, whittle out the pins, tie them on, and "finish" eight or ten caps in an hour. A former correspondent assured us that in an emergency, he had made fifteen in an hour, adding "I did not stop to smoothe the pins much, as that was not necessary." All painting or varnishing preparations upon the cloth are worse than useless. The cloth will shed rain as well as a cotton umbrella, while any substance to make it water tight will prevent the escape of the moisture from the damp grass.

To use them.—Cut down your hay, let it wilt a little, pitch it into cocks, and throw a cap over each, fastening down the four corners with the wooden pins attached to them. Your hay may then stand until it is cured, and afterwards until you are ready to take it in. Two persons can take hold of the four corners of the lower one of twenty to forty of these caps, spread out one upon the other, carry them along, and dropping the pile by the side of a hay cock, seize the four pins of the upper one, spread it over the hay and pin it down, and take up the remaining caps and go on to the next cock. If at all active they can cover half a dozen tons or more in a single hour, and uncover it in less time.

Advantages.—Every one is familiar with the fact that hay "cured in the cock" is greatly superior to that dried in the sun. By curing in this way there is far less waste of leaves and "scatterings," than when gathered into windrows after being dried. This is especially the case with clover. The average annual loss in haying from damage by rains and dews, is much greater than is generally supposed. It is a low estimate to say that this loss is equal to one dollar per ton on all the hay cut in the country. Who

can estimate the number of animals which are rendered unhealthy and often lost from eating musty damaged hay? Who that has carried hay to market does not know that bright, green colored, well cured hay will bring two to five dollars a ton more than the same hay in a dark colored, "banged," poorly cured condition. The feeding value of hay depends much upon the amount of sugar, starch and gum it contains, but in sundrying much of these materials is changed to woody fibre. All of this is obviated by having a supply of cloth hay caps (umbrellas), so that you can not only dry it in cocks despite rains and dews, but also take your own time for doing it. Let us estimate

The cost and profit of Hay Caps. At 14 cents a yard for the cloth, a cap $1\frac{1}{2}$ yards square will cost 21 cents. The making can be done at odd spells, or on rainy days, and this trifling cost need not be reckoned. A dozen of them, costing \$2 52, will cover a ton of hay. They may be used, on an average, at least three times each season. If carefully housed they will last ten years. This will be \$2.52 for covers for 30 tons, or about 8 cents per ton. Allowing 50 per cent for interest and storage, we have a cost of $12\frac{1}{2}$ cents per ton, or a dollar for 8 tons. But we may double, or quadruple this estimate and the cost would then be but half a dollar a ton.

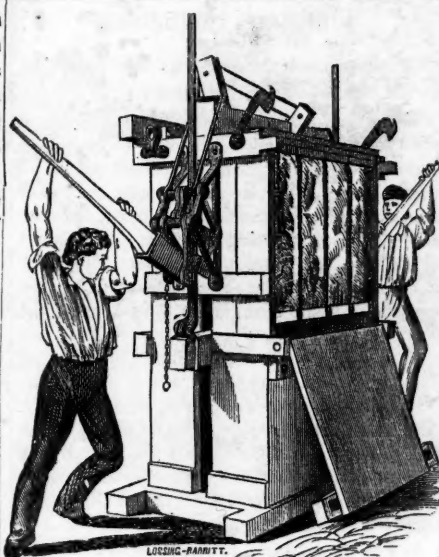
Other uses of the caps. The caps provided for hay may also be used for covering wheat and other grains standing in shocks in the field. It will pay to provide them for this purpose alone. We have heard of their being used over corn. When used for this purpose, they are of course subjected to longer exposure and weather, and will not last as many years, but even then they will pay we think.

Large caps for Wagons.—Several persons have used and recommended providing one or more large sheets to throw over loads of hay and grain in an emergency, and also over stacks necessarily left unfinished at night or interrupted by showers. The plan is doubtless a good one.

We have thus spoken strongly in favor of hay caps, but we do not do so unadvisedly. From what we already know of their use, we have little doubt, that in less than a dozen years, they will be considered as essential to haying and harvesting as any other implement now in use. We have letters—too numerous to publish—from those who have used them for years past, and they all concur in saying that they have more than paid their cost in a single year, and some have said "during a single long rain." We close by repeating the advice heretofore given, viz: try a few of them this year, and if your experience is so different from that of others, that you do not think they will pay, why the cloth will not be lost. Your wife will tell you that "cotton cloth never comes amiss, no matter what shape it is in."

Society, like shaded silk, must be viewed in all situations, or its colors will deceive you.

The mind has more room than most people think, if we would but furnish the apartments.



INGERSOLL'S IMPROVED PORTABLE HAY AND COTTON PRESS.

PRESSING HAY FOR MARKET.

There is an annual increase in the demand for hay, straw, &c., for use on ship-board, and also in our cities, where dry fodder is every year becoming scarcer and higher, owing to the absorption of meadow fields as pasturage grounds for milch cows and other animals. The new facilities for transportation constantly being opened, render it much easier than formerly to bring in from a greater distance hay, straw, &c., and a good Press for reducing these substances to a compact form for transportation has come to be a great desideratum. These have been constructed of various forms, but have generally been objectionable on account of their great bulk, difficulty of being removed from place to place, and the clumsy manner in which they are worked. Most of these difficulties have been obviated, however, in a recently-improved Press, of which we give an illustration above. We have seen several of these Presses of different sizes, and worked one of them with much satisfaction. In the cut, the system of levers appears more complicated than it really is. When to be put in use, the pulling of a cord drops the lower platform to the bottom, when the front represented here as thrown down is closed up, and the hay pitched in, and the top shut down. A lever is then put into the iron socket on each side, and by simply working the lever up and down, the lower platform is raised up with great force. When the material within the press is reduced to its smallest dimensions, the binding cords, which may be ropes, wooden withes, or annealed wire, (which is now coming into general use), having been previously placed in the grooves in the side of the press, are bound around the bale. The cover is then thrown up, the front turned down, and the bale rolled out. The compactness of the machine, the ease of transportation, the simplicity and continuous working of the levers, and the great power obtained, renders this machine worthy of attention. The same form of press is well adapted to pressing cotton and other substances. Cannot farmers contrive to press straw into bales, and send it to us at a cheaper rate than we can now get it for—six cents for a "bundle" no larger than one's arm? These presses are of various sizes, and cost \$50 to \$125. Further particulars may be obtained by referring to an advertisement elsewhere.

A TURNIP DISCUSSION.

NO. I.

The farmers of America seem to be "all in a muddle" upon the subject of turnips. In England, the question is settled. Turnips are the sheet anchor of light soil cultivation, and the basis of the alternate system of English husbandry. It is the one great crop of the farm, and fills almost, if not quite, as large a place as maize does in our system of husbandry. It produces an enormous quantity of fodder, and makes beef and mutton abundant, and of excellent quality, and aids to a great bulk of manure. In short, turnips, coal and iron, are three strong material pillars of the British empire. The late Mr. Webster, in his last visit to Europe, made extensive observations of this crop among English farmers, and on his return to this country, frequently recommended it in his occasional speeches and writings. He also commenced its cultivation upon his farm at Marshfield with eminent success.

Many intelligent cultivators, especially those in the vicinity of our large cities, have experimented with it, and found it a paying crop for the purpose of fattening cattle. Turnips, we believe, are every year growing in favor in this country, and will eventually have a much more prominent place than they now hold, though we do not think it probable that they will form the basis of our agriculture, as they do in England.

There is a class of conservatives, and very intelligent farmers, who are entirely faithless as to the value of the crop, and ridicule its pretensions to any conspicuous place in a rotation for our soil. They tell us that the climate of England is entirely different from ours, the system of husbandry different, meat markets higher, and the crop that would prove highly remunerative there, will not pay here. They also inform us, with due gravity, that even if the crop would pay, it cannot be grown here with any sort of certainty, for they have tried it repeatedly, and failed. While the skies of England are perpetually dripping, and the climate cool, we have a clear, fierce sunlight in Summer, and frequent drouths, that make a turnip crop impossible. Other gentlemen of equal intelligence entertain sanguine views of the value of this root, and assure us of crops as abundant and as certain as the soil of England ever yielded.

Where does the truth lie? What are we to expect of the turnip crop? It would not be strange, if the opposite views we have here presented both should prove to be a little wide of the mark. The truth undoubtedly is, that the English climate is remarkably congenial to the constitution of this plant, and that their system of husbandry is calculated to make the most of it possible. Whether the quantity of rain falling there in a year be more or less than that which falls here, it undoubtedly comes more frequently, and the clouds and fogs keep the soil in a much more uniformly moist and cool condition. There are not such extremes as prevail with us. Then, as a rule, they cultivate their fields much deeper than we do, underdrain them, and use much larger quantities of manure. Though this bulb has nearly ninety per cent. of water in its composition, it will not flourish in a poor soil. To get twenty-five or thirty tons from an acre of ground, as is common there, requires large quantities of manure. The English farmer does not hesitate to lay out twenty to fifty dollars in manuring and preparing a single acre for this crop, and finds that this expenditure pays much better than any less sum. So safe is this investment, and so uniform is the practice, that in case of change of tenants, little difficulty is found in estimating the value of a turnip crop yet upon the ground, or the increased

value of the land prepared for turnips, where no crop has been gathered. The farmer there has one advantage over us in a mild Winter climate, which allows this crop to remain upon the ground, where it is fed by cattle and sheep. Thus the labor of gathering and storing the crop, so necessary here, is saved.

Much as Nature has done for the necessities of this crop in England, art has done still more. If the farmer there should attempt to grow turnips on the same kind of soil often used here, undrained, plowed shallow, and half manured, he would sometimes fail, as we do. The great want of this plant seems to be a rich, cool soil, where the moisture will be seasonably furnished through the Summer. Turnip culture in this country shows that these are the conditions of its healthy growth. On a poor, exhausted soil, it does nothing. But yard sheep at night for a month on a few square rods of the same field, and it will produce a luxurious crop of white turnips. Again, it does well on new, fresh cleared land. The virgin soil of the forest is full of vegetable matter, is light and spongy, so as to retain moisture better than old lands. Again, other things being equal, this root does better within a few miles of the sea-shore than further inland. The presence of the sea makes a cooler and moister atmosphere.

These facts indicate the true policy of the American farmer in regard to this crop. He should not touch it, unless he is prepared to furnish the plant the necessary conditions of luxuriant growth. If he can devote no more manure and labor to this crop than he gives to land producing but thirty bushels of corn to the acre, he is wise in eschewing turnips. He may as well stick to his text, that John Bull can raise turnips, and Brother Jonathan cannot. But if he believes that art can assist Nature, and remedy, to some extent, defects of soil and climate, let him plant turnips. If he will take the pains they do in England, we have no fears for the result. A soil may be made rich, cool and moist, like the virgin soil after the forest is cleared, where turnips always flourish. Light sandy soils are extensively used for this purpose, but they are well furnished with manures and vegetable matter. Wet soils and heavy clays prove to be well adapted to this crop, when underdrained to the depth of three feet.

The extensive cultivation of turnips for the purpose of supplying feed for cattle pertains to a more advanced stage of agriculture than we have yet reached. But we are quite confident that we shall attain it before many years. It will make progress with subsoil plowing, under draining, and thorough manuring. From the general principles here laid down, the farmer will perceive what are the requisites of the piece of *ruta bagas* he means to plant.

This variety is frequently sown in June, but a fair crop may be expected, if the seed is put in early this month. We advise all who have cattle to feed in Winter, to experiment with a quarter or half acre prepared in a thorough manner, and mark the result. The sooner they are put in now, the better. For the numerous varieties of white turnips, a month later is time enough. In future numbers, we shall discuss a little more in detail the preparation of the soil for this crop, manures, varieties, methods of sowing, after-culture, diseases and enemies, and modes of storing for Winter use.

BIRDS AND WEEVILS.—It is said that a farmer near Binghamton, N. Y., last year, in order to convince a neighbor of the destructiveness of birds, shot a yellow bird in his wheat field, but on opening its crop, they found in it two hundred weevils, and but four grains of wheat, and in these four grains the weevils had burrowed.

HOME-MADE FERTILIZERS.

A correspondent sends us the following as his plan of saving manures :

1. All the soap-suds, slops and other liquids of the house, your inquirer proposes to carry by a drain of four-inch tile, or by a metal pipe from the sink, or from a tub sunk outside the house into a tank near the stable, or into a brick receiver filled with dry swamp muck, and renewed as often as fully saturated, the saturated muck to be composted under cover, or taken to garden, orchard, or fields, according to the season of the year. Is there any cheaper or better way ?

2. In regard to the night-soil on the premises, your inquirer has been as yet unable to form any plan of managing it which is at all satisfactory. Any statement of a plan of management which has been tried and found to work well, or any suggestion that promises well, whether tried or untried, would much oblige one, and probably hundreds of your readers.

3. For the purpose of saving stable manure from the continual waste and deterioration caused by rains, winds, and sun, your inquirer proposes to build a shed, so as to admit of driving a wagon through it, to take away the compost made in it during the season of stabling. He proposes to use nine barrowfuls of muck for every single barrowful of stable manure. What better could he do ?

4. The liquids of the stable he proposes either to conduct by gutters into a tank, or to receive immediately into a bed of muck, under or behind the stabled part of his stock.

5. It is proposed to get out several hundred loads of muck, to be hauled home when dry, and put under cover, for the purpose of absorbing liquids and escaping gases in composts, &c.

On these and other points, any suggestions would benefit
MANY READERS.

REMARKS.—1. The receiver should be cemented, so as to save all the liquid manure.

2. A good method of saving night soil is to have a light box under the privy, to be removed as often as once a month, and to use plaster or coal-dust daily, to absorb the ammonia. This deodorizes the material, and makes it less offensive than stable manure.

Another method is to have a cemented vault beneath, holding several cords, and to throw in muck and other absorbents, and clean out thoroughly once a year. It will depend something upon a man's location and facilities for obtaining absorbents, which of these methods he should pursue.

3. If muck is plentiful, nine barrowfuls of muck to one of manure would do well, though less would do, unless his land is very deficient in vegetable matter.

4. It will be better to have a pump in the tank, so situated that the water can be occasionally pumped over the compost. This will prevent undue heat, and will diffuse the good qualities of the liquid manure equally through the whole mass.

5. This is all right, and if our readers will all follow out these suggestions, there will be less occasion to buy guano or other concentrated fertilizers.

HUMBLE VIRTUE.—Flowers have bloomed on our prairies, and passed away, from age to age, unseen by man, and multitudes of virtues have been acted out in obscure places, without note or admiration. The sweetness of both has gone up to heaven.

WONDERS OF THE BEE-HIVE.

NUMBER I.

On this beautiful May morning, when the warm sun is hurrying up vegetation, which unfortunately "slept over" this Spring, and the orchards are in glorious bloom, our attention is called to the *honey bee*, which is so early on the wing, and so diligent in improving every opportunity to increase its stores of food. Here is one, flying from flower to flower, stopping now to try one blossom and soon leaving it as if it had already been visited, pausing longer at another and drinking in its rich nectar; and then again on the wing, as joyous and happy as the birds of Summer. We must capture some of these busy insects, and invite our readers to examine them a little more closely.

We might easily throw a handkerchief over one that is busy on the flower, but a better way is to take a common glass tumbler and clap it over the flower upon a book or shingle, shutting the bee up in a glass prison, where we can keep it until we have leisure to look at it. There, we have succeeded, and breaking off the stem of the blossom we carry the captive home with us.

It is a curiosity, even as we see it through the glass; that restless motion of the wings, that singular hum, and all the evidences of life, are well worthy of our notice. There's some anger, too, but we will not expose ourselves to the poisonous sting.

A common magnifying glass will help us in our study of its habits, and instead of killing the bee, we will put it to sleep by pushing under the glass a little piece of cotton, on which we have poured a few drops of chloroform. In a few moments we find it stupefied, though not entirely motionless, and we can observe the movements and joints of its limbs better than in a dead carcase. Spirits of camphor would answer the same purpose as chloroform.

The bee is an insect; everybody knows that; but what is an insect? We turn to Mr. Dana's definition in Webster's Dictionary,—"an articulate animal,"—something that has life, sensation and the power of voluntary motion, and that is furnished with joints; "composed of three distinct parts,—the head, corslet or thorax, and abdomen;" these we readily distinguish. "The legs, six in number, with usually two or four wings (the bee has always four) attached to the thorax; and along the sides of the abdomen minute punctures, called spiracles, by means of which the respiration takes place." We can count the legs and the wings, but the breathing holes are not easily seen without a powerful magnifier.

What a curious head the bee has! Its shape is singular, and on each side it has what seems to be an immense eye. But in fact each of these balls is composed of an immense number of eyes, crowded close together, and six-sided in form. We cannot distinguish these with a common magnifying glass, but we can see the minute eye-lashes that come up between these separate eyes to defend them from injury. What need is there of so many eyes? Does it not hinder the vision? We should be greatly embar-

rassed if we saw every object multiplied a thousand times; but we do not see objects double because we have two eyes, and probably the bee also sees everything singly. It is supposed that many eyes are given it that it may see on every side at once, and without turning its head.

We find also two black horns, called *antennae*, a fifth of an inch long, standing out in front of the head. These move in every direction, and are supposed to be organs of feeling. The loss of them would occasion great inconvenience to the insect, and bring its usefulness to a speedy end. They are undoubtedly of special service within the hive, where, in complete darkness, work must go on with perfect regularity. We notice, too, that bees meeting each other, cross their *antennae*, which is their way of shaking hands.

The bee belongs to a class of insects that have a *trunk* or *proboscis*, quite as serviceable if it is not as large as that of an elephant. We see it to the best advantage when the bee is taking up food; for at other times it is usually carefully folded up out of sight under the head. When it is fully opened, we can distinguish five separate branches, shining as if they were made of horn. The middle and longest of these is the real trunk, and the others are its sheath. It is flexible as India-rubber, and when dipped into honey it collects a small amount, which is easily transferred to the mouth. It is said not to be a *tube* through which liquids can be drawn, but to resemble a tongue for lapping up food.

Beside this trunk, the bee has a regular mouth and jaws, not moving up and down like ours, but sideways. With this it is enabled to do all the nibbling needful; it can trim down its combs, it can bite away parts of flowers to get more easy access to the cups of honey, and it can even gnaw through paper and cloth. Its tools are humble, but efficient.

There are also two small black *feelers*, called *palpi*, one on each side of the mouth, shorter than the *antennae*, which are too small to attract notice, and the object of which we cannot state with confidence.

So much for the head of the bee; but its other parts are also worthy of study. The *thorax*, or middle portion of the body, is covered with hairs, and to it are attached two pairs of wings and six legs. The wings of each pair are of unequal size, but so closely united as to move together. We stop to admire their delicate texture, the penciling of the frame-work, their smoothness, gloss and transparency.

Then the legs are curious, especially the hind pair; the middle joints of these are flattened out so as to form a kind of basket, and the bee we are examining has actually got a load of meal, kneaded up into balls and well balanced on either side, and reminding us of going to mill on horseback with a bag of corn.

This meal is the pollen of flowers, which serves as meat for the young brood; and which, when deposited in the hive, is known as bee-bread. When a bee alights on a

flower he collects the honey secreted there, this meal sticks to its jacket; and the bee, being neat in its habits and economical withal, brushes it away carefully and packs it down in its baskets, and so goes home with a double load, of honey and bee-bread.

At the end of each leg we find a *double* hook, by which the bee can suspend itself and hang any length of time without exertion.

The *abdomen* is composed of a number of rings, which play into each other like the parts of a spy-glass. It is on the sides of it that the breathing holes are placed, but the chief point of interest, if not of attraction, is the *sting* at the end. The bee we are examining has very kindly consented to thrust out its sting for our inspection; and a minute drop of its poison rests on the very tip of it. We smell it; it has a peculiar odor; we taste it: once is enough, and we will not keep it long on the tongue, lest head-ache should follow; for this poison, unlike that of the rattle-snake, cannot be swallowed with impunity. The sting has a barbed point, and when thrust into the flesh is not easily withdrawn, and the poison ejected through it needs but little time to produce large and painful swellings. This is the protection that the bee has against its enemies.

We have not come yet to the wonders in the bee-hive, but this bee came from a hive, and there are thousands more like it there. They go where we cannot go, but we shall try to make them disclose some of the mysteries of their temple, and give us the sign and pass-word of the fraternity.

ARTIFICIAL SWARMS.

To the Editor of the American Agriculturist:

I would advise a little caution in making "artificial swarms," as recommended on page 130 of the *Agriculturist*, June number. It is, that a "new queen will be speedily provided" by the old stock, after forcing out the swarm, &c. I have a little experience in this matter, resulting quite differently,* and that is, the old stock will utterly refuse to do any such thing, nine times in ten! The only chance of success is during the swarming season, while something of the swarming fever is present. If done later than this, it is necessary to provide another queen for the old stock, after taking out the swarm. When not done at the proper season, and no swarms issue, the advantages are generally on the side of letting them remain. Put on boxes, the surplus honey and a strong stock are worth more than two weak colonies poorly supplied with honey, as is usual in such cases.

M. QUINBY.

* See remarks on this subject, in the "Mysteries of Bee-keeping Explained," pages 253-4-5.

REMARKS.—Our experience differs from our correspondent's; and referring to the facts mentioned in his volume, we see no reason to withdraw our advice to make artificial colonies about the time of natural swarming. Mr. Q. waited till the swarming season was past; then, disappointed because his bees had not colonized, he forced some swarms, which did tolerably well. In the original stocks also, from which the swarms were driven, the bees seemed to be industrious for a time, and brought in pollen, but

after some weeks had passed, he found them destitute of eggs and brood. He does not tell us there were no remnants of queen cells; and so we are at liberty to believe that queens were reared, and were lost after leaving the hive to meet the drones, in the manner he describes on a previous page. It may have been so late in the season that no drones were to be found. This opinion is confirmed by his remark in subsequent experiments, that in such circumstances "they were very sure to rear queens," which, however, "from some cause were lost after they were matured." But this accident also happens after natural swarming; and certainly, the use of sealed queen-cells in the manner recommended by Mr. Q. will not ensure one against the same thing in forced swarms.

THE CHEDDAR CHEESE.

This particular manufacture of cheese, which has acquired a considerable notoriety for superior excellence, is made in the following manner:

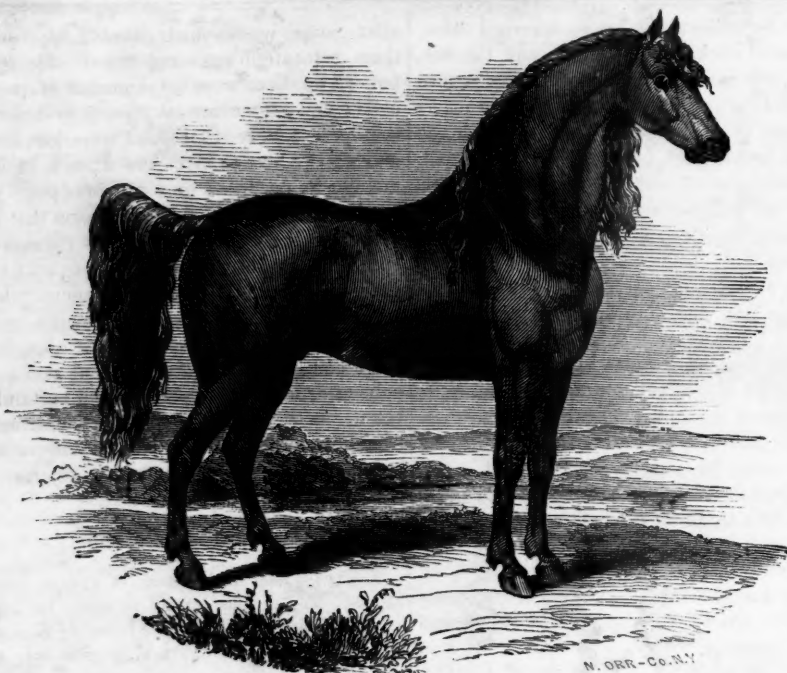
As soon as the morning milking is over, the milk is mixed with that of the previous evening, and the whole is warmed to 80° by heating a small portion of the night's milk. As soon as it is of the exact temperature, which is ascertained by the thermometer and not by guess, pure, well-flavored rennet is added in the usual manner, and the whole allowed to stand one hour for coagulation. Next gently break the curd and take off a small quantity of whey, to be heated in a tin vessel placed in water.

Break the curd carefully and minutely, and add as much of the heated whey as will raise the temperature to 80°, leaving it another hour, when a few pailfuls of the whey are heated so as to raise the whole mass to 100°. Previous to pouring on this latter, the curd is broken as carefully as before, and the whole is actively stirred to mix it regularly, and not allow any portion to become over-heated. After standing half an hour, remove the whey by dipping out the greater part of it from the top, and drawing off the balance from the spigot at the bottom.

When most of the whey is thus drawn off, cut the curd from the sides of the tub and heap it in the middle, where it should remain an hour longer. The curd is next cut in large slices, and turned over in the centre of the tub as before, leaving it to drain for half an hour. After this interval, it will be ripe for pressure, but must first be cooled to 65° by breaking with the hand and placing on a cooler. Having reached the proper temperature, put it in one or more vats (molds), and subject it to a moderate pressure for fifteen or twenty minutes.

The next process consists in taking the curd from the vat and passing it through the curd-mill to break it finely, when it is salted and made into a cheese. A pound of good salt is sufficient for fifty pounds of curd.

The cheese is now carefully put into the press, where it remains till next morning, when it is reversed in the vat, and another cheese-cloth is put on it. The morning following, a fine cotton cloth is used, to give it a smooth surface, and it is again reversed in the vat, and pressed twenty-four hours, after which, it is laid upon the shelf. When the cheeses are taken from the press, they are each placed in a piece of canvas to preserve their shape. At first, they should be turned daily, but as they become firmer, they require it less frequently. A temperature of 55° to 65° is regarded as the best for ripening Cheddar cheese.



GIFFORD MORGAN, JR.

Foaled May 23, 1850, the property of Elijah Judson of Woodbury, Conn. Sire, Gifford; g. sire, Woodbury; g. g. sire, Justin Morgan. Dam, Ribbon Back, by Young Black Hawk; g. dam, taken from Vermont to Connecticut in 1825, and said to have been sired by Justin Morgan. Gifford Morgan, jr., is jet black, a little under 15 hands high, and weighs about 1,100 lbs. He is now owned by Mr. H. B. Munson, and is kept at Keokuk, Lee County, Iowa. We are glad to see the Morgan stock so well represented west of the Mississippi.

LETTER FROM TIMOTHY BUNKER, ESQ.

HIS VIEWS ON PASTURING CATTLE IN THE ROAD.

MR. EDITOR:—You see, I was so busy last month, planting, and getting things started for the Summer, that I didn't find a minute's time to write to anybody, and hardly to be polite to my neighbors. I wish all my neighbors had been as busy, and as slack on politeness as myself. But no sooner had the grass begun to start in the Spring, than some of them began to send along their compliments by their cattle, as much as to say, "By your leave, Mr. Bunker, I will keep your lawn in front of the house well cut and shaven, and won't ask you anything for the job." I counted, on Saturday, at least a dozen animals in the road. There was Jake Frink's horse and colt, and Bill Bottom's drove of yearlings, and Uncle Jotham Sparrowgrass's two cows, besides two or three other folks' cows that I should not like to mention in the same company.

Now you see, Mr. Editor, if a man's going to be polite at all, it is always best to attend to it in person. This sending along civilities by stray cattle is rather doubtful courtesy. It might happen, you know, that the shaving of one's lawn down to the roots would not be acceptable, and if it were, a second civility in the shape of the hogs to turn the sod of the lawn bottom side up, might be a little too much of a good thing. (You see I have learned to say "*lawn*" since I commenced reading the papers.)

Now I don't like to say a word against my neighbors in general, or the Hookertown people in particular. But this turning cattle into the street is a piece of bad morals, that is a disgrace to any community. It is against the law, and every man has a right to put stray animals in the pound, and make the owners pay damages. But if one enforces the law, it always makes trouble, and the man who finds his cattle impounded, always feels aggrieved, and lays up a grudge against his complaining neighbor. He does not consider that he has himself been an offender first, and

violated the law. It is a clear case, that when streets were laid out, they ceased to be private property, and were henceforth to be held for the public good, to serve simply the purposes of travel. If a man turns his cattle into the highways to feed, he violates the rights of his neighbor, as much as if he turned them into his neighbor's pasture. He appropriates to his own use, what belongs to another. He not only trespasses upon the public domain, but his cattle become a nuisance to the whole neighborhood. They enter every open gate and yard, and frequently become unruly, leap fences, and destroy crops at this season of the year. The loss of temper from these constantly-recurring provocations is very great. I think Job himself would have fretted some, to have waked up in the morning, and found a dozen cows in his corn-field.

It is a barbarous practice, and costs the community a hundred-fold more than all the grass in the road is worth. We have to make a great deal more fence than we should need, if everybody confined their cattle to their own pastures. Now, every man has to fence all his lands by the road, not for his own convenience, but to keep other folks' cattle from trespassing upon him. I have been in communities without fences by the road-side for miles, and rode through the standing corn, and rye and oats, without seeing a cow or calf. When we reckon fence at a dollar a rod, we can see to what a large expense farmers are subjected, to give a few penurious people the privilege of pasturing their cattle in the road.

You see, Mr. Editor, I am not going to stand this nuisance any longer. I shall give Jake Frink and Bill Bottom one fair warning, and after that, if their cattle are found in the road, they will go to the pound. This kind of politeness costs too much entirely. What do you think of it?

Yours to command,

TIMOTHY BUNKER, Esq.

Esquire Bunker is right. Cattle running at large are a nuisance that should not be tolerated in any civilized community. The

pound is a sure remedy. Let him try it.—Ed.

WHAT IS THE MATTER WITH THE HENS?

"Have not had an egg for a week, and the corn they eat is a caution in these hard times." They are shut up in a yard, of course, and cannot have access to the green grass, and to the insects, which Providence has provided for them in Summer. "Man shall not live by bread alone." And the proverb is true of fowls. What could you expect of sensible hens, but that they would stop laying when you cut off the supplies. Now get a liver from the butcher's stall, or any other cheap meat, and see with what avidity they will devour it, and almost quarrel for the last morsel. Offal from the fish market, or any animal food, will answer quite as well. If at a distance from markets, upon the farm, and you confine your hens, mix coarse meal with whey, or skimmed milk, to satisfy their craving for animal food. Supply them also with clear water, and grass or weeds daily, and ashes and oyster shells. Look also at the roosts, and keep the droppings well sprinkled with plaster and muck. Attend to these things, and you and the hens will soon sing a new song over fresh laid eggs.

A GOOD WORD FOR TOADS.

Tradition says of the Indians, that it was their custom when they carried their friends out to burial, to call for eulogies of the dead as they stood around the grave. If a good word could be spoken for the departed, he was committed to the dust with all the honors; but if he had lived so worthless a life that no one could speak well of him, he was left by the open grave, without the rights of sepulchre.

Were this custom now prevalent, it might go hard with the toad, if we took common fame as the true interpreter of his merit. It is true that Shakspeare sung of him, some centuries ago:

"Sweet are the uses of adversity,
Which, like the toad, ugly and venomous,
Wears yet a precious jewel in his head."

But the poet's faith in his jewels is now put down among popular fallacies, and he is simply regarded as an ugly monster, one of those mysteries of Providence which mortals are not expected to fathom. Neither for good or bad qualities is he celebrated, but is looked upon as a disgusting reptile, without use appreciable by man. But there was truth as well as poetry in the bard's illustration. The toad has a jewel, but he was mistaken about its locality. It is seated in his stomach instead of his head, and, unlike the oyster, whose pearls are the result of disease, this comes of health and good digestion.

We were walking in our garden the other day, as we love to do, and came upon one of these squatters among our squash vines. He was seated near his hole in the wall, surveying the premises, and apparently enjoying the growth of the vegetables like a philosopher. Have you ever noticed the

benevolent expression in the eye of a toad? If it were not for his uncouth dress, we could call him a gentleman. His philosophic mien was catching, and we fell to speculating upon the value wrapt up in that carbuncle jacket. We asked the question, so current in *upper tendom*, what is he worth? not looking upon him, however, as a candidate for matrimonial honors, even if it should appear that he had a million of jewels in his head. It is said that the Creator has formed nothing in vain, nothing without specific plan and design. Why was the toad made so disgusting, dirt-colored, wide-mouthed, pot-bellied, and moping? There is nothing about him to inspire affection or terror. Just then, some pestiferous squash bugs were crawling upon a neighboring leaf, and to see how ugliness would look in company, we threw a couple over to old carbuncle. In a moment his eye flashed with intelligence, and quick as thought his capacious jaws closed over the unlucky insects, with a snap like that of a miser's purse-clasp closing upon mint drops. We saw at once the worth of toads. The jewel in his stomach was an appetite for bugs.

We are not certain but a good supply of these animals in a garden would be as good a protection for the vines that bugs prey upon, as any of the specifics so confidently recommended. At any rate, the bugs and millers that pass their jaws, go to a returnless bourne. We could but think of the folly of the prejudice against this very useful class of animals. They should be domesticated in every garden, where they will lead reputable lives, and set man an example of patient industry in bug-killing, worthy of imitation.

HOUSE SLOPS—A GOOD WAY TO DISPOSE OF THEM.

See here! Messrs. Readers. Don't pass over this article with the mental conclusion that this does not interest *you*, as you have prepared a drain for your house slops, or that the "women" will look after *such* matters. We have half a tun of first best guano to sell you for three dollars sixty-two and a half cents—usual price, thirty dollars. Will you take it? Of course you will, especially if we pay the transportation, as we propose to do. But on a second thought, we have concluded we cannot spare what we have, but we will tell you where you can get it, or rather something equally good, and just as cheap.

In the *Agriculturist* for June, 1856, we described one method of using sink slops and all other liquids from the house. Here is the outline of the plan: In a large garden, in the corner nearest to the kitchen door, we dug out a pit, sunk in it a large pine hog-head, made for sugar and afterwards used for packing crockery. The upper head was taken out, and a board nailed across it to hold the pieces together. This board projected on each side far enough to serve the double purpose of handles, and to keep the head from falling in. The earth was filled in around the outside, the top being set on a level with the ground.

Into this reservoir, costing about 62½ cents we directed the kitchen and chamber maids to throw *all* sink slops, dish water, washing suds, chamber liquids, in short, all fluids and waste materials from the house. The coal ashes were also sifted into it. Though the hog-head was a loose affair, not tight enough to hold dry sand, the soapy materials soon formed a tight bed of the earth around it. As fast as the liquids accumulated sufficiently, they were baled out and deposited around the various plants in the garden. This was usually done at evening, after the labors of the day were over. To dip them



out, we used a home-made ladle, made by fastening a long handle, with screws and wrought nails, upon the side of a large paint tub that chanced to be at hand.

Now for the result. At the time of planting, the only manure used was less than a barrel of bone-sawings, put in with the seed, upon a quarter of an acre of poor soil, one-half of the surface having been covered over with earth from a cellar, and no manure having been applied in previous years to any part of the lot. We were unable to do anything at working or planting the garden until about the middle of May and later, and yet our "slop tub" produced such a magical effect that every thing planted, and there were not a few varieties of plants, grew most luxuriantly. If anybody had better vegetables, or more of them on the same amount of ground, we did not hear of it.

Moreover, though we live in a house of "moderate pretensions," and have but a "small family," there was about twice as much liquid in our reservoir as was needed, and we were really puzzled to know where to put it all. It could easily have been spread over half an acre of moderately good soil, that is around the roots of plants. If this appear like a large statement, just reckon how much soap, for example, is used during a single Summer, how much dish water and suds are required on a single washing day, and how much other waste fluids. Add to these, stale water thrown out when fresh is drawn, the drippings from the pump in the sink, the water used in washing potatoes and other vegetables, the sour milk, &c., &c.

The whole extra labor of saving these liquids in the reservoir, and distributing them over the garden, was not a dollar and a half. And how much better to use them thus, than to let them run off into a stagnant drain, or allow them to breed miasma, and an unpleasant stench under the sink-spout.

We have given you the result on our garden. A little reasoning upon the nature of the materials, and the benefits of using them in the liquid form, will show that just such results might be expected. As great sticklers as we are for the use of good Peruvian guano, when cheaper manures can not be obtained at home, we believe that it is more economical to husband the house slops in the manner we have described, than to buy guano at \$7 a ton (regular price, \$60 to \$65)—though note here, that guano is

profitable at the highest price, *after* the home manures are all used.

A word more about the reservoir. In May, this year, while making sundry improvements, we concluded to give our hog-head a neater look. To do this, we cut four pieces of boards, ten inches in width and four feet long. These we nailed together at the corners, to form a square frame, which was set down around the top of the hog-head, leaving the top a little above the surface. This was covered with four boards sawed into right lengths, and nailed, one upon the back side, and the other three fastened together by two strips on the under side, to form a movable cover. The rear edge of the cover is attached to the board nailed down by a couple of iron hinges. Whenever we wish to get at the reservoir, to pour in or take out the liquid, the cover is turned back. A coat of cheap dark paint was applied to the unplanned boards, and the whole is as neat as a painted box set down into the ground.

Cost of the superstructure: Two boards, 33 cents; hinges, 10 cents; paint, 12 cents, and one and a half hours time spent in making, not reckoned—paid by the pleasure of doing the thing.

Estimated value of the liquid manure *this* Summer, twenty to forty dollars, according to the season, and the consequent amount of extra watering the garden may require, *plus* the promotion of health and pleasure resulting from having all decaying slops neatly disposed of.

THINNING OUT VEGETABLES.

It seems a pity to put a hoe into those luxuriant rows of beets, carrots, parsneps, and onions, that already give promise of an abundant harvest. But full two-thirds of them must still be sacrificed, before you can get a full crop. They are cramped for room. The carrot sends out its roots on all sides of the main tap, and if it have chance, will completely occupy the soil on all sides of it with its fine rootlets. One root will appropriate the aliment in a square foot of soil, much better than a half dozen, and will make a greater weight of nutritious food at the harvest. This is what wise cultivators are seeking for,—the most food upon the least surface. Thin out then to six or eight inches apart, and if you want very large specimens for the Fairs, make the spaces a foot wide. The roots that are pulled up are excellent fodder for cows and pigs, and if you throw a few into the poultry yard, they will be appreciated. Try it and see.

MULCHING VEGETABLES.

Most rural improvers understand the value of a heap of old hay, or straw, around the trunk of a newly-set tree. It keeps the roots cool and moist through the season, and gives it a fair chance to live. It is equally serviceable in the vegetable garden. There are many plants that throw out their roots near the surface of the ground, and these fail as soon as the dry weather of Summer comes on. Peas frequently fail before yielding half a crop. A mulch of old straw between the rows will be of great ser-

vice to them, and prolong their bearing. Cauliflowers require a great deal of moisture in order to head well during Summer. Now is the time to give them a handful of straw, to keep the soil around them cool and moist. Egg plants and tomatoes are also benefited by mulch. Before it is applied the ground should be scored deeply with a hoe, so as to give opportunity for the circulation of air underneath the straw. If weeds and green material are used, they must not be put on so thickly as to ferment.

MELON BUGS.

Under this general name we include any and every insect, from the little black, almost invisible nit, to the large, yellow striped bug. Each year we meet with some new specific exterminator of these pests. Now, it is quassa, then it is decaying fish, or swabs of turpentine, guano, sulphur and pepper, soot and ashes, or thumb and finger patiently applied. To us, it always seemed that the sifting of soot, ashes, snuff and pepper, on the tender leaf, must injure the leaves, and so the health of the plant. Boxes covered with millinet have proved very serviceable to us for several years. For the last two seasons, we have used a simpler contrivance, viz.: a thin sheet of white cotton wadding laid over each hill of plants, and confined at the corners with small stones. This allows the light, heat, air and moisture, to reach the plants, but excludes the bugs perfectly. As the plants grow, the wadding may be loosened a little at each corner.

THE NEWER NATIVE GRAPES.

In a recent article, entitled "Grapes vs. Dwarf Pears," we promised to speak, at another time, of some of the best hardy grapes of recent introduction. That promise we now purpose to fulfil.

The Clinton Grape.—This is hardly a new grape, yet it is not so widely known as the Catawba and Isabella. It is said by some, to have originated in Central New-York, in a town of that name; by others, it is traced to a garden in Waterford, N. Y., the proprietor of which named it in honor of Gov. Clinton. The vine is perfectly hardy, easily propagated, of rapid growth, and is a regular and prodigious bearer. The clusters and berries are not large, both being about two-thirds the size of well-grown Isabellas. The fruit is round, black, and covered with a thin, blue bloom. Flavor somewhat rough and acid, especially if eaten before the fruit is fully ripe. It matures a fortnight or three weeks before the Isabella. Mr. Longworth, of Cincinnati, has experimented with it as a wine grape, and speaks of it in favorable terms. For northern latitudes, and for persons not fastidious about delicate flavors, it is worthy of cultivation.

The Concord.—This new grape ranks much higher than the preceding. It was raised from seed about twelve years ago, by E. W. Bull, of Concord, Mass., but was not offered for sale until it had been fairly tested for several years in his own grounds. We understand that this gentleman's method of

raising new grapes is as follows: He sows a great number of seeds of hardy and approved sorts, but rejects those which come up the first year, because they are generally found to be barren. The second Spring, the ground is well stirred, and a new crop of seedlings springs up from the first sowing, among which improved varieties are found. In this way, the Concord was obtained.

As to the qualities of this grape, we see no reason to change the opinion we have heretofore expressed. It is hardy, of luxuriant growth, and the fruit ripens from ten days to a fortnight earlier than the Isabella. The clusters are large, shouldered; berries large as the Isabella, often larger, nearly round, black, with a beautiful blue, plum-like bloom. We have seen bunches which measured 7½ inches long, and 5½ wide at the shoulder, fairly resembling Black Hamburg's. The berries are sweet, tender, juicy, a little foxy, and not quite so delicious and aromatic as the Isabella when fully ripe. We rank it in quality a little below the Isabella, but when its superior hardness is taken into account, as well as its earlier period of ripening, we think that for northern climates it will prove the most popular grape. It must become a very showy market fruit. Below the latitude of Albany or Newburgh, good judges still prefer the Isabella and Catawba.

The Diana.—This is an older variety than the Concord, but has not made as great a sensation in the horticultural world. It originated in the garden of Mrs. Diana Crehore, of Milton, Mass., and was named after her. It is a descendant of the Catawba, which it somewhat resembles.

Respecting the quality of this grape, we feel disposed to speak in the strongest terms. Bunches, not so long as Catawba, but more compact and heavy, not properly shouldered, but the main bunch has often a small one appended to it. Berries a little smaller than Catawba, and a shade paler in color; less pulpy, and more sweet and juicy than Catawba. Pomologists in the Southern States, who have grown it side by side with its parent, prefer it to that very excellent grape. The late A. J. Downing called it repeatedly, "the best American grape yet originated." We have fruited it several years by the side of many other varieties, and in eating from them all, one after another, have found ourselves almost unconsciously giving this the preference. If we could have but one native grape, that one should be the Diana.

The Delaware.—The origin of this grape seems to be somewhat uncertain. By some, it is claimed as a native; by others, as a "Lisbon wine-grape," or the *Traminer* of Germany, or the *Red Resling*. Mr. Thompson, of Delaware, Ohio, understands that it was sent more than fifty years ago to a gentleman in New-Jersey, by his brother in Italy. If it is a foreigner, its exemption from mildew, and its hardness, are somewhat remarkable. But whether it is a native American, or an adopted citizen, we welcome it as a worthy member of the grape family. Cluster small, compact,

sometimes shouldered. Berries about the size of Diana, and round. Skin thin, and of a coppery rose color. Pulp, very little. Flavor sweet, aromatic, more sprightly than the Diana. In our own grounds, it has grown somewhat slowly, and has not yet borne abundantly. It appears to be perfectly hardy, not an inch of young wood having been killed by the past two winters. Mr. Charles Downing and other equally good judges pronounce it one of our best hardy grapes.

The Rebecca.—Here is a new comer, and one whose coming has been warmly greeted. It is a chance seedling, which sprang up about eight years ago, in the garden of Mr. E. M. Peake, of Hudson, N. Y. It is perfectly hardy, having endured exposure unharmed for several years at Hudson, on an open trellis. Mr. Hovey gives the following description: "Bunches medium size, about six inches long, very compact, without shoulders. Berries medium size, obovate, about three-quarters of an inch in diameter. Skin thin, greenish white, becoming of a pale amber color at full maturity, covered with a thin white bloom. Flesh very juicy, soft and melting, and free from pulp. Flavor rich, sugary, vinous and brisk, with a peculiar musky and luscious aroma, distinct from any other grape. Seeds small; two to four in each berry." It ripens a week or ten days earlier than the Isabella. It won prizes last year, at the Exhibitions of several State Horticultural Societies, where it was pronounced by competent judges, "superior to the Sweetwater, and equal to the Golden Chasselas, or the Muscat of Alexandria." We have placed a Rebecca vine upon our experimental arbor the present season, and shall watch it with interest.

The Canadian Chief.—We have not yet seen this grape, but it is highly extolled by persons of reliable judgment. It hails, at present, from Hamilton, Canada West, and is hardy even in that climate, but is supposed to have originated in France. It is a white grape, resembling the Sweetwater, but with bunches more compact and larger than that variety is ever seen in open cultivation. We hope to learn more respecting it, the coming season.

Several other varieties of native origin are now being tested by committees and amateur fruit-growers in various localities, some of which will undoubtedly prove great acquisitions. Among these we may mention the Union Village, Carter, Brincklé, Stetson's No. 1, Graham, Clara, Allen's Hybrid, Emily, Breck's, Wyman's Seedling, and others.

The lovers of good fruit have reason to congratulate themselves on the introduction of so many excellent native grapes. To have superior table grapes, it is no longer necessary to erect costly glass structures. Everybody who has a house or barn, or fence with a south side to it, has hot-house enough to ripen the grapes of which we have spoken above. Indeed, even this is not absolutely necessary. Many persons have hitherto contented themselves with grapes more suitable for rifle-balls than for di-

gestion. If our readers—those who have not already done so—will plant those we have recommended, we are sure they will thank us for the advice.

GRAPE CULTURE—NO. VII.

BY WILLIAM CHORLTON.

MILDEW.

As this pest to the grape-grower commences its destructive effects, with the first damp and muggy weather in this month, and, if not timely checked, will ultimately destroy the hopes of the cultivator, the subject requires more than a passing notice. This intruder is a fungoid plant, strictly parasitical in its nature, requiring a living organism, upon which to commence developing. It is also entirely dependent upon a peculiar state of the atmosphere, otherwise the sporules or minute seeds which float unperceived in the air, cannot vegetate. These germs, individually, are so infinitely small, that the aid of a powerful microscope alone can reveal them to the human eye, but they are, nevertheless, real organic substances, imbued with the principle of life, which expand and multiply with wonderful rapidity when the requisite matrice and specialities are present. The first indication of mildew is manifested by brown spots on the leaves, generally along the mid-ribs and larger reticulations. The fleshy parts, so far as affected, are soon destroyed, and immediately after this, the fungus develops its fructification in the form of a white down on the under side of the leaf. In this state the spores are ripe for future growth; and so quick is this action, that in two or three days they will spread over a great part of the leaves and fruit, causing the entire vines to be irreparably injured for the season.

Our own native kinds, such as Isabella, &c., having a harder constitutional power, are only slightly, and sometimes not at all affected, but owing to our extreme changes, we are not able to cultivate the exotics in the open air to perfection, excepting in the best sheltered city yards. They are, primitively, natives of the more temperate parts of the Asiatic continent, where the climate and meteorological conditions of the atmosphere, during the growing season, are more genial than with us, which conduces to a steady action in the plants, and renders them less liable to injury from external influences. Our sudden transitions are the cause of mischief. For a time we have fine warm and clear weather, which brings the circulation of the fluids briskly forward, and abundant exhalations of the watery portions are going on, thereby depositing the more solid material in the internal structure; when in a few hours the sun is obscured, and the air becomes saturated with moisture. Under these conditions, the leaves or drawing reservoirs from the roots cannot separate and discharge the aqueous fluid, when a portion of the unelaborated juices are forced out through the stomata, and become just the kind of food for the fungus to subsist upon, besides furnishing a clammy substance for it to adhere to. After many years close observation, I have invariably found that a sudden check to the circulatory medium of plants renders not only the grape-vine, but most others, very liable to be infested with mildew, while, if a healthy and vigorous growth be maintained, they are comparatively free. For this reason, it is advisable to keep the doors and lower ventilators closed, and admit air only by the upper openings until the fruit begins to lose its acidity, after which, there is no danger.

The antidotes to mildew are a warm and dry

atmosphere, and sulphur. Whenever it is detected, do not use any water inside the house during cloudy or damp weather, and sprinkle sulphur over the floor in the proportion of one pound to each fifteen square yards. There is no occasion to throw it over the plants inside the house, but in the vineyard or out-doors, it will be requisite to dust it in an upward direction, so as to adhere to the under side of the leaves, and prevent the rains from washing it off. The fumes given out by slow combustion are the remedy, and care should be taken that it is not ignited. Mistakes have frequently been made by persons introducing burning sulphur into graperies and plant-houses, as well as using it under the leaves of trees out-doors, the consequence of which is, a total destruction of the foliage, if not death to the plant.

OUT-DOOR CULTURE.

Continue to keep the ground clear from weeds, using the hoe freely, but do not injure the roots. Remember that every weed draws moisture out of the earth, while every stroke of the hoe enables the dews to penetrate. Wherever it is possible, a good mulching of barn-yard manure, or any kind of vegetable refuse that is free from weeds, ought to be spread over the whole surface, which will assist in keeping the soil moist, and promote the vigor of the vines. Do not let the growth become crowded. Nip out the side laterals on the young canes down to the lowest leaf upon each, and the new growth of the fruit spurs in the same way to where last stopped. Soap-suds and chamber-ley are of great benefit, applied in dry weather, when the vines are growing freely. They ought, however, to be diluted with one-half water, particularly the former, which may be readily done by sinking a large tub in the ground in a convenient place, so as to receive the liquid as it is made, mixing as used. When the ground is very wet, do not add more moisture; but, generally speaking, at this season there is a want of it, and when it is applied, pour down in pailfuls over the surface as far as the roots extend, but not against the base of the stem, as many people very ignorantly do. The feeders are not here; they penetrate to a considerable distance, and water applied to the stem does more harm than good, sometimes rotting the trunk.

Never take off any leaves from the branches to "let in light to the fruit," which is another evil practice. The fruit is naturally shaded by the leaves, and so situated, it is always of better quality, provided there is a free circulation of air and overcrowding prevented, which may be done by following the advice above.

COLD GRAPERY.

The same practice of stopping the laterals and ends of the shoots, as described in the foregoing paragraph, will apply here. Maintain the temperature at 90° to 95° with sunshine, and graduate as advised last month. Continue to syringe the vines overhead, if the weather be dry and clear; but if mildew make its appearance, cease to use any water inside the house, and apply the sulphur as directed. Do not admit any more external air than is necessary to reduce the heat, and be careful under the circumstances to have the lower ventilators closed. This course, if adhered to strictly, and persevered in until the fruit begins to color, will most assuredly immediately check, and finally entirely destroy the mildew, while the introduction of any preventive in a liquid state is, to say the least, of a very doubtful utility; all such, which I have known, only increase the evil. See that the outside borders are well mulched, if not already attended to; and

should there be drouth, a good soaking of water in which is dissolved one pound of guano to thirty gallons; or, still better, the diluted drainings of a dung-hill will be of material service. As the berries progress in size, lose no time in commencing to cut out the superfluous ones, according to previous directions, and when it is desired to retain them upon the vines after becoming ripe, reduce the quantity of berries so that they may hang loosely, and the air be enabled to circulate through the bunches.

FORCING-HOUSE.

The only care required hereafter in this department will be the eradication of insects, and shortening-in the extra growth. Let the house remain open at all times, excepting during storms, to preserve the fruit, and prevent the vines from pushing a second growth, which would seriously injure them for another season.

RETARDING-HOUSE.

The same treatment recorded for the Cold Grapery last month will now apply to this, excepting that the thermometer may range some five degrees lower at mid-day, and great care should be exercised in using water. If mildew shows itself, keep the house dry, apply the sulphur, and employ the heating apparatus just sufficient to rarify the air. Lift the upper ventilators at the same time to reduce the temperature.

ASPARAGUS CULTURE.

[The following article was in type for a previous number, but, like many other good things, crowded out. We always prefer articles written in the plain, detailed, straight forward style of this. Mr. Wright's method differs a little from that recommended in our editorial chapter on asparagus; at page 19, (Jan. No.) but a variety of experience and practice is desirable.—Ed.]

To the Editor of the American Agriculturist.

This delicious vegetable is easily grown; and by a little labor and expense is soon brought to maturity. Wherever a plant makes its appearance in the garden, if cut down in the fall, well manured and faithfully salted early the next Spring, following it up from year to year, it will root out the grass and weeds around it, and spread in every direction. I have in my garden a productive little patch of this vegetable, which has made its appearance in the thick grass near the roots of an old plum tree. I have never done anything for it but to cut it down in the Fall, and manure it after burning the tops, and in the Spring fork the ground and salt it. It is spreading yearly, and encroaching upon the ground on every hand.

My first asparagus bed in this country was made in the year 1819, after the old-fashioned mode, by digging two or three feet and covering the bottom with old shoes, bones and small flat stones; returning the earth intermixed with a good proportion of good rich manure. The curbing was made of thin smooth stones, some 18 inches in depth, nicely fitted by a stone-mason. This old bed is still somewhat productive, furnishing many a good meal, in the season of it, for my own family, and some for my neighbors. A bed made this way brings the vegetable rapidly forward, and it is ready to cut in three years. Let none of the stalks be cut down during the Summer season, for fly-traps or otherwise; this is injurious. And none should be cut for eating after the first of July.

Some 12 years since I made another small bed on a different plan, which, although requiring a longer time to bring it to perfection, I like better, as it is more easily made, and will improve from year to year for a longer period. This bed was made as I would make a celery bed. I dug about

18 inches, and covered the bottom with six or eight inches of good well-rotted barn-yard manure, gently pressing it down with my hoe to make it more compact. This was covered slightly with the top earth taken from the ditch or bed. Now, to prevent the sides from caving or falling in, I took thin planks, six or eight inches in width, (good substantial fence boards will answer the purpose,) and after rabbeting the sides to fit the curbing planks to their place, I secured the whole by means of stakes driven into the ground and well nailed. The curbing was left a little above the outside surface. The seeds were now planted, about one foot apart each way, two or three seeds to a hill, to prevent a failure. This should be done as early in the Spring as the ground will admit. The bed should be kept clear of weeds the first season by means of the hoe.

After two or three frosts in the Fall, I cut down the little delicate asparagus tops evenly with the surface, leaving them and any other green weeds or vegetables on the ground to rot, covering the whole with a light coat of well-rotted manure.

Early the next Spring, after the frost was fairly out of the ground, I took an old dull-tined fork and forked the ground all over, carefully avoiding the little roots. Now, to assist in keeping down the weeds and save the labor of hoeing, I covered the whole bed slightly over with salt. If the seed is good, the next Fall the bed will be covered with a thrifty growth of asparagus, two or three feet in height; and after two or three frosts it must be cut down again and burnt on the ground. It will now bear a good coat of manure. The next or third Spring it should be carefully forked over as before, and covered with a coat of bulk or packing salt, sufficient to keep out every weed till late in the season, when the asparagus will have run up to seed, and the few weeds which may have sprung up will do little or no injury. This process of cutting and burning the tops in the Fall, on the bed, after a few hard frosts, and richly manuring the bed, and the Spring following forking and salting, must be performed annually.

Some writers have recommended the use of hen dung to enrich an asparagus bed. I have tried that repeatedly, but with no visible good results. For the last five years I have used nothing but a heavy coat of apple-tree leaves on my deep bed. It has worked well. The only inconvenience that I have experienced from the use of this kind of manure, has been that some of the stalks come up a little crooked and out of shape; one Fall and Winter being insufficient for rotting the leaves. But before the close of Summer they are completely rotted, and the bed is light and mellow as an ash heap. The asparagus is growing larger and larger from year to year.

When an asparagus bed is made in front of a building, or board fence, (which is a good position,) it should be at such a distance as not to endanger the same. My first bed, which is six feet in width, I have found, by experience, is about two feet and a half too wide; for, on cutting the asparagus for cooking, I am often under the necessity of treading with one foot on the bed, which is injurious, and frequently a large stalk, just peeping out of the ground, is crushed and spoiled.

A bed three feet and a half wide, and six rods long, (and in that proportion,) should have at least three bushels of bulk or packing salt spread over it every year. In that case there is no trouble of weeding.

Asparagus should always be cooked soon after it is cut. By keeping it only a few hours, unless tightly covered and kept in a cool place, it loses much of its delicate flavor. It should be cut

when five or six inches high, a very little below the surface. All the large stalks, which are not tender and brittle, should be pared with a sharp knife, as we pare the potato, and the whole cut up into little pieces not more than an inch or two long. It is now boiled in a small quantity of water, a little salted. Only sufficient water should be retained to make a rich gravy, by the addition of butter, which is indispensable. To this may be added a few slices of nicely toasted bread, for those who are fond of it.

SERENO WRIGHT.

Granville, O., Feb. 19, 1857.

NOTE.—In a letter dated May 12th, Mr. Wright speaks of fine cuttings from the bed made in 1819!

PINCHING.

The new shoots are now making rapid progress. On young trees, where wood is the great want, you will of course let them run, nipping only those shoots that would mar the symmetry of the tree. But on those of larger growth, where fruit is the one thing needful, you can check the growth of all the shoots except a few leaders, by pinching off the ends. If this is done seasonably, it tends to throw the sap into the formation of fruit buds, for the next year, and there is no waste in the energies of the tree in forming wood, only to be cut off. Early bearing is induced, and a more symmetrical head is formed. This is the proper time to attend to this important part of tree husbandry.



The same practice should be pursued with many of the shrubs and blooming plants of the flower border and lawn, and is extensively practised upon pot plants cultivated in houses. Not unfrequently does the leader itself require pinching back to give the plant a bushy habit, rather than a tall slim growth. The operation is a simple one, as the shoots are of the present season's growth.

BLACK KNOT ON PLUM TREES.

"What is the matter, neighbor, with your plum trees? Many of the limbs are dead, and black excrescences adorn the rest, as if plums were dried on to them."

"I cannot tell anything about it. They keep growing, and where the knots flourish, the plums don't. What is to be done?"

There is a remedy for your trees, and now is the time to apply it. If you will examine the limbs a little more closely, you will find, probably, the bark swelling and bursting in places three, four, six inches in length. If these are neglected, they will make black knots another year. Cut these diseased places out with a sharp knife, and cut clear into the wood, below the diseased part. Remove all the old warts from the small limbs. Follow up this treatment; and if the disease has not made great progress, you will give your trees a new lease of life.

Gather fruits in dry weather, and when the sun shines, and place them as carefully in the basket as if they were glass. The smallest bruise commences a decay

PRUNING.

The middle and latter part of this month is a good time to use the pruning knife in the Orchard and Nursery, and upon shade trees and shrubbery. The sap which ascended in the Spring has been elaborated by the leaves and is now in a proper condition to form woody fibre, which will soon entirely close over the wound, leaving it in a healthy state. It is objected to Summer pruning that the hot sun is liable to crack the wound and admit water into the heart of the tree. The thick foliage will in a great measure, shade the wounds from the sun, and where large limbs are necessarily removed, the exposed surface should be coated with gum shellac dissolved in alcohol to the consistence of paint, or with cloth dipped in melted grafting wax.



We should prefer going into the Orchard with no other pruning instrument than the knife here introduced; that is to say: trees should be so trained and pruned in the nursery and during the first years of Orchard culture, that a knife of this kind will ever afterwards do the business. Have an eye to the full grown tree, and cut out the cross branches to form a moderately open head, both to admit air and afford room for gathering the fruit. If, however, through your own or others' neglect, large limbs require taking off, do it neatly with a saw, not an ax, guarding against splitting when the limb falls, and after paring the wound smoothly, coat with the above mixture. We have often seen trees, especially the taller growing varieties of Cherry

so pruned that stubs six to ten inches long were left for the ostensible purpose of a ladder to climb upon. This is an unsightly and highly injurious practice. The old stub will very soon decay, and the new growth of each year will be "rolled" upon it instead of healing over as it would, were the limb taken off close to the body of the tree. When cut at a distance from the trunk, the stub commences to rot, and often extends to the heart of the tree which in course of time leaves a hole for the rain to enter and hasten the decay.

Many former fruit growers injured, or entirely ruined their trees by excessive pruning at improper seasons. The first settlers, especially from the moist climate of England, were disposed to cut away the branches of large trees, to let in the sun and air which they believed essential to ripen off the fruit, either forgetting, or being ignorant of the fact that in our hot, dry atmosphere, a good supply of foliage is essential to screen the trunk and bodies of the limbs from the burning sun. Especially should the spurs upon young pear trees be left for this purpose; and low branching trees are better on this account. By repeatedly cutting away large branches from the tree, the balance between root and top is destroyed, too much sun strikes upon the unprotected wood, and if, as is too frequently the case, the pruning is done in early Spring, the cut does not seal over sufficiently to check the flow of sap as it ascends the trunk and pushes towards the leaf buds. The energies of the tree are thus sensibly diminished and decay commences at the wounds caused by pruning.

We consider the "leafing out time" as the worst season for pruning, and late Winter, or early Spring as the next most objectionable period. July and August are good months, and the process may very well be extended to October.

BUDDING FRUIT TREES.

As a general thing, farmers, as well as owners of garden plots, when living in the vicinity of well regulated, thrifty nurseries, will find it less troublesome and quite as economical to purchase trees in a suitable state for planting. Others remote from such nurseries, and especially those planting largely, will find it convenient both in point of economy, and for greater confidence in varieties worked under their own eye, to raise their trees and do their own budding.

Budding is preferable to grafting in several respects. The operation can be performed on younger trees, and with more certainty of success than grafting, besides requiring much less time, and furthermore, failures in budding may be grafted the following Spring.

If one year old seedlings were set in nursery rows in the Spring, they will mostly be in proper condition for budding during this and the following months (July and August). The particular period can best be ascertained by trial. If the bark separates readily from the wood the stock is in the right state to receive the bud. Provide a budding knife, (shown below) which is very convenient, though we have budded hundreds of trees with a "jack knife," in olden times. Get some good bass matting (inside bark from bass-wood trees) for strings. Cut off shoots of the present year's growth from those trees you wish to propagate. Remove the leaves growing out from the buds to be taken, but leave half an inch or more of the stem of the leaf, to handle the bud by when inserting it. Keep the shoots bearing the buds in a pail while using, with the butt ends immersed in water. The bass should be cut into strings of about ten or twelve inches in length, and a bundle of them moistened and wrapped in a wet cloth to keep them damp and pliable.



You are now ready to insert the buds. Select a smooth space on the stock near the ground to receive them. Quince and Peach stocks require budding so low that it is better to first draw away the earth from the trunks with a hoe, that the buds may be inserted as near the roots, as possible. The stocks in such cases will need rubbing off with a woolen rag to prevent the dirt from dulling the knife. The knife here introduced is the old English budding knife, upon one end of which is an ivory or bone appendage called the *haft*. This is used to separate the bark from the wood. Our most expert budders use a similar blade of the best material in a common handle separating the bark with the rounded edge of the blade. Having selected a favorable spot near the root, make a cross cut as seen in figure 3,

and a downward slit from this for an inch or a little more in length, in both cases cutting entirely through the bark. Instead of withdrawing the blade after this last cut, incline the handle a little to the right, and working the blade a little to part the bark from the wood, pass it upward in the same slit. With a little practice, the left hand lip can in this way be readily parted from the wood. Next select a stick of good, well developed buds, and proceed to remove one, by taking the shoot in the left hand with the butt end from you, and inserting the knife one half inch beyond the bud, make a



smooth cut, as seen at 4 at fig. 2, the blade coming out half to three fourths of an inch upon the other side of the bud. Figure 2. represents the bud taken out. The bud piece here represented is rather too short; it should be at least an inch and a half in length. The English practice is to remove the wood taken out with the bud, but our own nurserymen have of late years discarded it, believing the wood of service to prevent the bud from drying up under our hot Summer sun. With the rounded edge of the knife, separate the other lip at the cross cut and slip the bud down as seen in figure 3, cutting off any of the bark which would extend above the cross cut, so that it will fit neatly in its place. Confine the bud firmly by passing a strip of matting entirely around it, except the crown, as seen in figure 4, opposite.



Some use for binding narrow strips of worn muslin, coated with grafting wax, made more soft and sticky, by adding tallow, lard or oil. Old muslin or cotton will burst by the growth of the tree, and save loosening by hand. The bandages are prepared by applying the wax while hot, with a painter's brush. Tear or cut the cloth into strips half an inch in width, and ten to twelve inches in length, cutting so that the strongest threads of the cloth shall run across the strips and thus burst readily by the growth of the tree. In about two weeks inspect the trees, and rebud any that are much shriveled. If they appear fresh and plump, they are doing well, and the matting may require loosening or even removing if there is a rapid growth, and it has become well established.

In the following Spring, as soon as the buds start, go over the whole and head down all the stocks which have taken, leaving a stub some three inches in length, to which the new shoot should be tied after growing a few inches, that it may assume a perfectly upright form. It is also less liable to be broken out by high winds. About mid-summer, or after the new shoot has attained a foot or more of growth, the remainder of the old stock above the bud should be removed with a sharp pruning knife, using great caution not to injure the new shoot. The white line at A, fig. 5, shows the point at which it should be "rounded off." The rapid growth of wood and bark will soon heal this wound, and in a few years the tree will be entirely straight and sound at this point.

HOUSEHOLD MACHINERY.

THE SEWING MACHINE.

[The following communication does not strictly pertain to Agriculture or Horticulture, yet it comes from a highly intelligent source—from one who has no "ax to grind"—and as many of our lady readers have from time to time inquired of us on this very topic, we think the subject not out of place in this journal. In regard to the particular machine referred to we are not prepared to say that it is superior to others costing much less money. We have for some time contemplated introducing the music of the "sewing piano" into our own household, and shall do so as soon as we have time to examine the merits of the different instruments offered to the public, and report upon the result. We are already convinced that sewing and knitting machines can and will soon greatly lessen the toilsome work of the needle, and stop the everlasting knitting which consumes so many precious hours which we desire to see devoted to adorning the inner temple of the mind. Let us have the labor saving machines of various kinds within as well as without the farm house; so far we are a believer in "Womens' Rights."—Ed.]

To the Editor of the American Agriculturist.

Nothing commands so high a price, relatively, as personal labor in New England. Our population in the rural districts is diminishing by emigration. The young, the strong, the bold and enterprising, go to the great West to seek their fortune, to acquire wealth and fame. We cannot blame them. The land there is cheaper, more productive, and more easily tilled. It has been stated by one who pretends to know, that four thousand of the inhabitants of New Hampshire are intending to go to Kansas, and other new Territories and States at the West, this very Spring. The number is probably overstated, still many will go, both men and women, and those, too, who are most in demand at home. What shall we do then? We, who are left in the old nest? Shall we become birds of passage too; and leave our Granite State to revert to its primitive condition? By no means; as the young and industrious leave us, we intend to supply their places, as far as possible, with machinery. Farmers have already diminished their labors very much by the introduction of machinery; but the duties of the household, within doors, remain chiefly as they were. Some washing machines, churns, cheese presses, improved brooms and mops, are the principal contributions which art and science have made to the department of the kitchen. Cradles and baby-jumpers lend their aid to quiet the nursery—"a consummation devoutly to be wished." Time and skill have recently brought into use a more important adjunct still to the housewife. "The song of the shirt" will soon become obsolete; "destitute needle women" will be among the things that were, and the aching fingers and dimmed eyes of the family seamstress will soon be talked of as one of the trials of ancient housewives. Sewing machines are taking the world by storm. They captivate all hearts and brighten all eyes. They discourse to the weary housekeeper most excellent music. They can't be beat. My wife and I debated long about the propriety of buying a sewing machine. Could we afford it? Ah! that's the rub. One hundred and twenty-five dollars for one of Grover & Baker's best machines, makes a large outlay for one family. But what is the interest of that sum? Did not we hire a seamstress three months last year, and board her, to do our family sewing? Oh, yes; that cost us more than the interest on the price of three machines; besides, we cannot now procure a seamstress, for love or money, to do our work. The help cannot be found. That decides the matter. We must have a machine. It is ordered; in fact, Mr. Editor, our sewing machine has actually come! Such a welcome arrival we have not had in twenty years of house

keeping. It has come, and as good fortune would have it, a lady visitor arrived the same day who knew how to use it. It is put to service forthwith. Every member of the household feels competent to use it. Grandmother can drive the needle *scientifically* on the first trial, because, in her youth, she plied the linen wheel, an obsolete piece of furniture in our day. But the sewing machine and the "little wheel," are operated precisely alike. Now, after three days' duration, every member of the family can use the machine. It is whirling as soon as the children are fairly dressed. Sarah made twelve towels before breakfast this morning, and Jane found time between the processes to sew up her doll's dress. The older members of the family are buying cloth by the piece to make up sheets, pillow-cases, and necessary garments for the various members of the family. After this trial of the machine, the ladies all say that it will do the work of twelve seamstresses. Ladies from the neighborhood are dropping in to see this patient and uncomplaining servant, and they all, with one accord, exclaim: "I must have one; I shall save it in health and comfort, even if I have to diminish other expenditures." So the ball, or rather the "spool," is in motion in our quiet village. So far as I can judge, the machine sews with great rapidity, accuracy, neatness and strength. It does not seem liable to get out of order. The apparatus is very simple, and the wheels are so massive as not to be easily broken. It seems to me to be an admirable invention for the saving of labor and trouble; and when personal service is so high and difficult to obtain, its introduction is exceedingly opportune. My wife could not be hired to give it up. She fell in love at sight, and I think the passion will be as lasting as life. In fact, the machine is a universal favorite here, and I like the idea exceedingly of having all our sewing done by a servant that never talks—only sings

"Stitch, stitch, stitch."

It neither brings nor carries news; never gossips; never tells tales. Its constant refrain is "work, work, work;" and when its busy hum is hushed, its very silence is eloquent of service done, of task performed, leaving nimble fingers and bright eyes to the ladies. AGRICOLA.

New-Hampshire, April 10, 1857.

Annals—Transplanting.

In our June number we gave a chapter on "Flowers," with directions for planting, &c. If sown at the proper season, many annuals are now ready to transplant from those borders where they came up too thickly, to vacant spaces and where failures have occurred.

It may be remarked that some kinds will not bear the operation unless performed in a careful manner and under favorable circumstances, such as cloudy weather, careful lifting and separation of the plant, watering, shading, &c.; others, owing to their constitutional vigor and hardiness, speedily recover from the shock, and make a rapid growth; while others, again, though not many, are almost sure to die, no matter how carefully the operation may be performed. These last should be planted at once where they are to remain, and thinned out when they come up too thick.

When the plants are sufficiently advanced in growth to be in proper condition for transplanting, say when they have made two or three leaves in addition to the seed leaf, enter the trowel a couple of inches from the plants, and some four or five inches deep, giving it a slanting direction toward the plants; press your fingers against the soil on the side nearest the plants, and withdraw the trowel; this will prevent the earth from breaking. Next enter the trowel on the opposite side, slanting toward the plants, as before; press the handle of the trowel down as you would a lever, and a mass of plants will be lifted in the same way. Separate them by crumbling down the ball of earth with the thumb and fingers, but gently, so as not to injure the small fibrous roots; then take the plants, one at a time, by a leaf, and they will part readily. Select the places where you wish to plant, loosen and pulverize the earth, make a hole of sufficient size, and insert the plant up to the seed leaf, drawing the earth about it

and press gently to secure it in its place. If the weather is dry, watering will be necessary, shading the plants for a few days by placing over them a piece of paper, or, better still, an inverted flower pot, always removing the covering at night and during cloudy and rainy weather.

How to Set Cabbage Plants.

It is now time to put out the second crop of cabbage. Under a burning sun, it is sometimes difficult to make the young plants live. The rainy day, so much coveted for this purpose, is sometimes a stranger for two or three weeks, and much time is lost upon the crop. With proper care the plants may be put out and live, even in dry weather. The best time, if a rainy day can not be had, is just at evening. The seed bed from which the plants are to be taken, should be thoroughly saturated with water to the depth of three or four inches. Then by taking up the plants gently with a small spade or trowel, a ball of earth will adhere to each plant, and if put out carefully they will live and soon become established. They should be watered as soon as set out to settle the dirt around the roots. If the sun comes out very hot it is a good plan to put a green leaf of pie plant, burdock or cabbage, over them by day, removing it at night. By managing in this way, ninety-nine in a hundred of good plants will live. Never set cabbages in ground manured with the contents of the pig sty.

For the American Agriculturist.

Rape Culture.

An article under this head, in the June number, induces me to write. I have an acre of Rape under cultivation, sown and planted last summer and fall, in different ways, for the purpose of testing the practicability of producing the seed for oil. The enormous prices demanded here for every description of lamp oil, and the low price of land of a deep and rich soil, seem to call loudly for a thorough trial of the merits of this plant. The present appearance of my crop, however, does not justify the recommendation of its general culture, nor yet its condemnation; further experiments only can decide this.

Up to the warm weather in February the plants looked well, but since that time, about three fourths of them have been killed by the alternate freezing and thawing. Those which did Winter it through are in a very flourishing condition now, beginning to blossom. Let us "try, try again."

I have read that even in its most favored country it is an uncertain crop and that three good crops out of five, are all that is expected, and will pay well. From the little I have seen of it, I do not apprehend that the "labor" required will be any hindrance to its general culture.

Crawford Co., Pa.

FRANCIS SCHREINER.

Read the Chapters on Draining—Geology.

We hope no one will omit to read these articles from beginning to end, on account of their length. To make the subject as plain as possible to even the youngest reader of the Agriculturist, and also as a matter of interest, as well as profit, we have discussed somewhat more minutely than we at first intended, a few of the elements of Geology, bearing upon the formation of soils. We consider the science of Geology so intimately connected with a knowledge of the soil we cultivate that we are half inclined to give a few elementary chapters on this topic and may do so at the beginning of our next volume, if not before. While we claim that practice—experience—is the best present guide to successful soil culture, we are yet convinced that a little knowledge of chemistry, geology and meteorology, will not only assist the practical man in his operations, but also add vastly to his pleasure while pursuing his wearisome labors.

The Editor Absent.

The Conducting Editor of the Agriculturist (MR. Judd) has been absent on a Western tour of observation and study, since the early part of June, and will not return until about the middle of this month (July). Our readers will please take this as an excuse for any defects they may find in the closing pages of this number which has gone to press without his usual supervision. Several communications and private letters must also remain unattended to at present.

OFFICE ASSISTANTS.

Acknowledgement of Seeds.

We have received a large variety of seeds from correspondents and subscribers in all parts of the country, and take this method of returning our thanks for them, as we are unable to reply to each individually. We are giving most of them a fair trial upon "experimental grounds," and those which prove valuable will come into the free distribution next season. Our policy is to disseminate choice seeds as we would knowledge, instead of confining them to localities where first introduced, or allowing them to be monopolized by unscrupulous speculators.

STATE AGRICULTURAL EXHIBITIONS 1857.

Name.	Where Held.	Date.
United States.....	Louisville, Ky.....	Sept. 1—5
American Institute.....	New-York.....	" 12
Ohio.....	Cincinnati.....	" 15—18
Canada East.....	Montreal.....	" 16—18
Illinois.....	Peoria.....	" 21—24
N. Western Fruit-Grower's Ass'n, Alton, Ill.....	".....	" 29
Maine.....	Bangor.....	" 29 Oct. 2
Pennsylvania.....	".....	" 29 " 2
Wisconsin.....	Janesville.....	" 29 " 2
Canada West.....	Brantford.....	" 29 " 2
New-Jersey.....	New-Brunswick.....	" 29 " 2
Vermont.....	Montpelier.....	" 30 " 2
Indiana.....	Indianapolis.....	Oct. 4—10
New-York.....	Buffalo.....	" 6—9
Iowa.....	Muscatine.....	" 6—9
New-Hampshire.....	Concord.....	" 7—9
Kentucky.....	Henderson.....	" 12—16
Connecticut.....	Bridgeport.....	" 13—16
East Tennessee.....	Knoxville.....	" 20—23
North Carolina.....	Raleigh.....	" 20—23
Massachusetts.....	Boston.....	" 20—23
Maryland.....	Baltimore.....	" 21—25
Alabama.....	Montgomery.....	" 27—30
West Tennessee.....	Jackson.....	" 27—30
Virginia.....	".....	" 28—31
South Carolina.....	Columbia.....	Nov. 10—12

COUNTY FAIRS.

MAINE.		
South Kennebec.....	Gardiner.....	Sept. 23—25
Franklin.....	Farmington Centre.....	Oct. 1—2
North Franklin.....	Strong.....	" 6—7
Androscoggin.....	Lewiston.....	" 6—8
West Somerset.....	Madison Bridge.....	" 7—8
Lincoln.....	Waldoboro.....	" 13—15
East Somerset.....	Hartland.....	" 14—15
NEW-HAMPSHIRE.		
Sullivan.....	Charleston.....	Sept. 23—24
Hill-borough.....	Milford.....	" 30—
Rockingham.....	Exeter.....	Oct. 1—2
VERMONT.		
Champlain.....	Vergennes.....	Sept. 17—18
Franklin.....	St. Albans.....	" 23—24
Orange.....	Chelsea.....	" 23—24
MASSACHUSETTS.		
Essex.....	Newburyport.....	Sept. 30—Oct. 1
CONNECTICUT.		
Windham.....	Brooklyn.....	Sept. 16—17
NEW-YORK.		
Saratoga.....	Mechanicsville.....	" 15—17
Jefferson.....	Watertown.....	" 16—17
St. Lawrence.....	Canton.....	" 16—18
Wayne.....	Lyons.....	" 16—18
Monroe.....	Rochester.....	" 21—23
Franklin.....	Malone.....	" 23—25
Queens.....	Jamaica.....	" 24
Livingston.....	Geneseo.....	" 24—25
Orleans.....	Albion.....	Oct. 1—2
Palmyra Union.....	Palmyra.....	" 14—16
PENNSYLVANIA.		
Delaware.....	".....	Sept. 17—19
MARYLAND.		
Washington.....	Hagerstown.....	Oct. 13—16
KENTUCKY.		
Harrison.....	Cynthiana.....	Aug. 25—28
Kentucky Central.....	Danville.....	Sept. 15—
Bourbon.....	Paris.....	" 23—25
Logan.....	Russellville.....	Oct. 6—8
OHIO.		
Fayette.....	Washington.....	Sept. 8—10
Clermont.....	Olive Branch.....	" 8—11
Hamilton.....	Carthage.....	" 8—11
Warren.....	Lebanon.....	" 9—11
Geauga (free).....	Claridon.....	" 16—18
Trumbull.....	Warren.....	" 23—24
Darke.....	Greenville.....	" 23—25
Stark.....	Canton.....	" 23—25
Columbiana.....	New-Lisbon.....	" 28—30
Portage.....	Ravenna.....	" 28—30
Butler.....	Hamilton.....	Sept. 29 Oct. 1
Ashtabula.....	Jefferson.....	" 30 " 1
Adams.....	West Union.....	" 29 " 2
Muskingum.....	Zanesville.....	" 30 " 2
Belmont.....	St. Clairsville.....	" 30 " 2
Jefferson.....	Steubenville.....	" 30 " 2
Tuscarawas.....	New-Philadelphia.....	" 30 " 2
Geauga.....	Burton.....	" 30 " 2
Lake.....	Painesville.....	" 30 " 2
Union.....	Marysville.....	Oct. 1—2
Putnam.....	Kalida.....	" 1—2
Wayne.....	Wooster.....	" 1—3
Wyandot.....	Upper Sandusky.....	" 1—3
Ottawa.....	Port Clinton.....	" 6—8
Lorain.....	Elvira.....	" 6—8
Harrison.....	Cadiz.....	" 6—9
Licking.....	Newark.....	" 7—8
Washington.....	Marietta.....	" 7—9
Clark.....	Springfield.....	" 7—9
Guernsey.....	Cambridge.....	" 8—9
INDIANA.		
Henry.....	New-Castle.....	Sept. 23—25
ILLINOIS.		
Morgan.....	Jacksonville.....	Sept. 8—11
Mercer.....	".....	" 29 Oct. 1
Pike.....	Pittsfield.....	Oct. 14—15
MISSOURI.		
Franklin.....	Union.....	Oct. 8—10

Above we give a list of all Exhibitions of which we have received authentic information. We wish to make the list much more extensive and complete next month, and solicit reports from every county in the country.

FOR THE BOYS AND GIRLS.

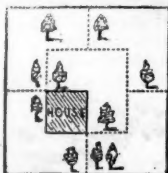
(The whole of our paper is designed for younger as well as older people; the following is for the Boys and Girls only.)

Answers to Problems 1 and 2. We have received an unexpectedly large number of answers to each of the problems given on page 138—a whole drawer full of them, and with a single exception the answers were all correct and some very well executed drawings have been furnished, showing more artistic skill than we had credited to so many of our younger readers. We give engravings of the first answer received. Several received afterwards were even better than this. Will not some of our ingenious young readers send original contributions for this column.



ANSWER TO PROBLEM I, PAGE 138.

My ground is divided, my tenants at work,
And he'll profit most who does not labor shirk,
So let them toil on till cabbages rise,
And carrots and turnips to gladden their eyes,
Gooseberries and Currants, and Raspberries too,
Shall amply repay the work they may do.



ANSWER TO PROBLEM II, PAGE 138.

Here's my thanks my young friends, for your kindly aid,
Twenty two answers to my questions were made
By young "Agriculturists," who by thousands are counted,
The trouble with my lodgers is entirely surmounted.
They have all gone to work with a hearty good will,
Each one his own plot with vegetables will fill,
Save the ground where the trees grow, which they will
hoe with much care,
And if you'll call round in Autumn the fruit they will
share.

WILLIAM.

Correct answers have also been received from: "An Old Boy," 73 years old Stamford, Ct.; Jas. L. Gerrish, N. H.; D. W. Gore, Bradford Co., Pa.; Merrill Foote, Lancaster; J. D. P., Belvidere; A. Henry, City; Geo. E. Steele, Kingsville; M. S. Osgood, W., N. Y.; F. M. S. P., N. Y.; J. S. B., L. I.; G. W. Barnard, Ct.; A Subscriber, La Salle; R. W. Coy, N. Y.; D. M. Goodrich, Owego; J. T. Briggs, F., Vt.; J. R. Dowling, M., Ohio; K., Union Co., N. J.; P. S.; Franklin Briggs, W., N. Y.; E. J. W., Hartford Co., Pa.; John Fleming, R., N. J.; D. W. Guy, Oxford; L. W. N., Jr., C., N. H.; Lester Winfield, G. M., N. Y.; Samuel J. Beatty, Washington Co., Pa.; Alexander H. McKelvy, Warren Co., Pa.; C. S. Pillsbury, N. H.; Walter A. Carpenter, Min. Ter.; Mary Jane Esson, Canada West, &c.

NEW PROBLEMS.

PROBLEM 3.—How can 10 trees be planted so that there shall be 5 rows and 4 trees in each row?

PROBLEM 4.—How can 12 trees be planted so as to have 6 rows, and 4 trees in each row?

PROBLEM 5.—How can 19 trees be planted so as to have 9 rows, and yet 5 trees in each row?

PROBLEM 6.—How can 27 trees be planted so as to have 9 rows, and 6 trees in each row?

What is Stereotyping?

A boy reader, "out West," writes that the *Agriculturist* is stereotyped, "but having been brought up almost in the Western woods, he does not understand what the word means, and wishes the editor would explain it to him." He also says he frequently reads of "stereotyped farming," and does not understand the connection of farming printing implied in using the same word for both. He begs us, "to excuse the simplicity of the question as he is very young." Certainly we will, and it will give us great pleasure to answer, in this column, a multitude of questions from Boys and Girls, though, as stated above, we are trying to write all the articles so plainly that our young readers can all understand and be interested in every page.

Stereotyped, means made solid or fixed. Thus, in ordinary printing every letter is cast upon the end of a bit of

type metal about an inch in length. These type letters, are set together in proper order to form the words and lines, with little shorter pieces of metal between the words. When the type is all put together for a page, it is fastened into an iron frame, called a *chase*, and several of these pages are put together in what is called a *form*. They are then placed upon a printing press, when a sheet of white paper is laid on and a heavy plate pressed upon it, or a roller run over it, which presses down the sheet and causes it to take up a little ink previously put upon the types.

But the heavy press sometimes knocks some of the letters out of place, and where a great many sheets are printed the face, or head of the type, gets worn down, as the same letters are used in successive numbers of a paper. Further, when the types are once taken apart, they must all be set up again, if more copies are wanted. These difficulties are all avoided by stereotyping the pages. Thus, when a page of types is all ready to be printed from, the stereotyper takes a thin mortar, made of burned plaster of Paris and water, and spreads a coat of it over the face of the type. This soon hardens, and is then lifted off, and shows upon its lower side an exact impression or mold of the whole page, including all the letters, dots, punctuation marks, &c. After thoroughly drying this plaster mould, a thin layer of melted type metal is cast upon it. When this cools and is taken off, it shows an exact face of letters just like the original page of types, the lower ends of the letters being all joined to the thin plate of metal, so that none of them can be moved out of place in printing from them. There are, of course, 24 such plates for each number of a paper like this—one for each page. The pressman lays these plates upon wooden blocks, about an inch thick, and prints from them instead of from the loose types. When he has printed all the sheets wanted at one time, he packs the plates away in a box until more copies are wanted.

You thus see that by keeping these plates, say of this present July number, we can at any time, even a dozen or twenty years hence, get them out of the box and print more copies to supply any call for back numbers. We are now sorry we did not keep stereotype plates of former volumes, as a great many of them are called for, and we cannot hereafter print any of the first fifteen volumes without setting up all the types again. But when you look at this page, or any of this or subsequent volumes, you can always think that there is packed away in a box in a fire-proof vault, under one of the streets of this city, a thin plate of metal, having upon one of its sides all the letters, figures or pictures, &c., upon the page you are reading, and that the printer could, in half an hour, get out a plate and print you a new page without stopping to arrange the types.

"Stereotyped farming," is that which, like the type in the plate, is fixed, and is always in the same style—with no improvement.

Electrotype plates are similar to stereotype plates, only they have a thin coat of copper upon the face of the letters. Instead of casting the copper in the mold by melting it, it is first dissolved in an acid to form blue vitriol, and then it is cast down upon the mold by the electricity from an electric battery. Hence, the name *electro-type*. The copper-face types wear longer, and print a little better.

OUR BASKET

Into which are thrown all sorts of paragraphs—such as: NOTES AND REPLIES TO CORRESPONDENTS, with Useful or Interesting Extracts from their Letters, together with Gleanings of various kinds from various sources. The printers always have access to this Basket when they "have nothing else to do."

Improved Tools and Farming.—S. H. C., of Penn., wishes to know if the tools, to which we alluded in our January issue, will work well in somewhat stony ground. He also speaks of his success, or want of it in farming, and of his edification under our past instructions. As his case will answer for thousands of Eastern farmers, we quote his own language. "I have taken the *Agriculturist* for two or three years, and aside from the pleasure of reading it, I am doubtful if I have received any considerable benefit. In the manner of cultivation, when possible, I try to approximate its directions, when clearly expressed, but I continue to raise 25 to 30 bushels of corn, and about as many oats to the acre. True I have not commenced ditching, for I owe and have not got the tin. So I keep on receding and working hoping "something will turn up," though strongly of opinion that I had better sell here, and find a prairie farm, West. For, taking my own experience in contrast with nearly every experiment you record, I am no farmer at all, and probably never shall be, for at the rate I am gaining property now, it will be time to die long before I shall be able to manage one hundred acres as you would call well; yet I get along about as well as any of my neighbors, and a

good deal better than many, though every dollar's worth of produce costs me one dollar twenty-five cents in labor, taking wages I can get in other business as a basis."

REMARKS.—This is the old story touchingly told of the skinning system—little manure on much land—small crops growing "smaller by degrees and beautifully less"—an empty purse, and emigration. Farming must generally be unprofitable, where no more than thirty bushels of corn to the acre are produced, and it increases in profitability, not as one extends his acres, but as he increases the amount of production per acre. Evidently our friend has not yet full faith in the principles of husbandry we advocate, and so does not practice what we preach. He probably has run in debt for a much larger quantity of land than he has any use for, and has one half or more of his borrowed capital, where he has to pay interest and taxes, without getting a cent in return. He wants either less land, or more capital to work what he now has. He should either sell a part to raise the requisite amount, or hire it, if possible. He wants more manure, more labor and bigger crops. He should first endeavor to raise sixty bushels of corn on one acre, instead of taking two for it. Put on manure enough to do that, if it takes all in the yard and stables.

He can not be careful enough of the resources of the farm for making manures. Are the cattle all stabled through the winter, and during nights in summer, to save both solid and liquid manure? Are there no muck mines within reach? Twenty cords of manure may be made every year for every horse, cow or ox, upon the farm, and this spread upon an acre of ground, and plowed in six or eight inches deep, will raise the production above the old stereotyped crop of thirty bushels to the acre.

The tools that we referred to were the Potato Digger of Pitkin & Brothers, Manchester, Ct., which is warranted to dig with a team as fast as fifteen men can pick up, and the Harrow, Seed Planter and Horse Hoe of D. W. Shares, Hamden, Ct., all of which took the 1st Premium in their several classes at the State Fair last October. They are probably on sale at the Agricultural Warehouses in Philadelphia, or if they are not, they soon will be. For price and place of sale our correspondent can communicate with the above parties.

Trenching for Vineyards.—B. Simmons, of Ohio, furnishes the following, in contradiction of the commonly received opinion, that trenching and draining are necessary: "Possibly experience may dissipate this very dry vineyard hobby. To the facts. Mr. J. S. Lowry, of Berlin Heights, in this County, has a vineyard on a flatish plot of ground at the foot of what, for want of higher elevations, is called the *mountain*, it being some 150 feet high. It is on the northwest side, and where a small brooklet flows out over the low land at the head of the plain, keeping the soil saturated with water during the Spring, and sometimes in the Summer. The soil is a black clay loam, about one foot deep, and based on a subsoil of sand rock, impervious alike to plows and water; and he uses no drainage except slight surface drains. Mr. Lowry, in other respects, takes good orthodox care of his vines, and has succeeded in producing as fine grapes and as good wine as any other cultivator. The vineyards of Messrs. G. B. Hyde and J. S. Petton, on the lake shore, in this township, are extensive, and upon the black uncultivated clay loam of this region, where the water stands on the surface at all times during wet weather. Slight surface drains only are used, and no subsoiling or trenching; yet their vines are flourishing, their wines almost uniformly good, and their table grapes of the first quality, and wine ditto. The varieties are Isabella and Catawba.

It is a well known fact that nature plants all her vines in a swamp or muck land. Is she deceived? Does not the experiment of these gentlemen show that she is not?"

REMARKS.—Nature has a different object in view in vine growing from man. She wants wood and foliage; man wants fruit. It is, therefore, proper that man should prepare both the soil and the vines for fruit-bearing rather than for making wood. Grape vines will grow in almost any good corn ground and yield some fruit. The trenching and draining is to make the vines bear more abundantly, and to pay for the extra labor and leave a profit. This, we think, is the better course in the long run. Trenching and draining do not make the soil very dry, as our correspondent supposes, but furnish moisture in equitable supply through the season. See articles on draining, in the last and this number, on this point.

Using Mowing Machines.—T. Y., of Ulster Co., writes: "One very important requisite in using a mower, is to keep the knives free and sharp, in order to favor the team and machine. I have cut from 15 to 20 acres in one day with one of Allen's mowers. My manner of using the mower is, to go around the lot with square corners, using the file at one of the four corners every bout, as long as my plot of grass contains not less than five acres, and as often as to be equal to going around five acres thereafter, or say once in 30 or 40 rods. I throw the mower out of gear, and the turning gives the horses a

full breath, and the corner filling a few moments breath. No time is lost, but labor is saved for the mower and team. It only requires one or two rubs, with the file rightly used, to put the mower in good order when regularly attended to. The teams will do more and better work in the course of the season, used in this way, and the machines last much longer. Allowing the horses to stop at the corners, is to them like closing the steamer's valve a few moments while landing passengers; they start willingly and freely.

Wheat Insects—Red Weevil.—Daniel Bates, Trumbull Co., Ohio. By "Red weevil," you probably mean the *minor* or Wheat Gnat produced by the clear-winged Wheat-Fly (*Cecidomyia Tritici*) which has produced the chief insect destruction of the Wheat crop in Western New-York, Ohio, &c., during the past few years. The fly appears over the fields in great numbers on cloudy days, and mornings and evening during the last of June and first of July, laying its eggs upon *soft grain only*. These hatch out the orange-colored maggots. A remedy against their ravages would be worth millions to the country, but so far we are without a certain remedy. The best partial preventives are sowing early kinds of Wheat, and hastening forward the crop by stimulating manures, to get the grain hardened before the appearance of the fly. Dusting slaked lime over the fields when damp, and burning sulphur freely over the Wheat, have sometimes been a little advantageous. The Weevil proper, and the various species of Moths, attack only the ripe grain. The Hessian fly and the Chintz or Chinck bug operate upon the green stalks. This subject is treated more at length in Vol. XV, page 244.

Bugs and Cucumbers.—Mr. Bergen of Long-Island, recently stated that some farmer's in his neighborhood plant as many as ten acres each of cucumbers, and that the way they save them from bugs, is to use plenty of seed at first and then at four or five successive periods they plant on a new side of the hill, a lot more of seed. This supplies an abundance of young plants for the bugs to feed on, and they leave the stronger growing plants untouched. When well out of the way of bugs the surplus plants are dug up with the hoe. This is a similar plan to one we have recommended strongly for years past, and have found it successful in practice. See *Agriculturist* Vol. XII, page 88.

"Angle Worms."—"A Lad of Fourteen," at Kingsville, Ohio, says: "Angle worms are doing much damage in our garden, particularly around the rhubarb; they seem to take the richness out of the ground. Can they be destroyed?"

REMARKS.—They do no harm, and carry nothing away. They rather enrich the ground than otherwise. We have counted 35 on a single square rod in our garden this season. The centipedes or "thousand legged worms," are however, a nuisance, as they attack the plants. They, too, greatly abound, and nothing sends them off but a larger dose of salt than it is convenient or profitable to apply.

Ruta bagas Extra.—A Correspondent writes: To-day (June 18th) we have taken a lot of ruta baga seed (4 lb. to 1 acre) and sown it broadcast all over our garden, dropping it thickly wherever there is likely to be a single foot of spare room, as for example, between the rows of early corn and potatoes, peas, &c. The hoeing is now going on which will cover the seed; and hereafter the growing young plants will be cut up with the hoe like weeds wherever they are in the way, but left to grow where there is room for a single turnip. A useful plant may as well occupy the ground as a useless weed, and in Autumn we shall most likely gather several bushels of turnips for the bare cost of the seed, or 25 cents. This plan may be pursued not only in gardens but in fields, at any time in June, July, and even into September. After, say July 15, some of the later varieties of turnips should be substituted for ruta bagas.

Sowing Corn for Fodder.—J. Plocker, of Wanshara County, Wis., writes strongly in favor of sowing four or five bushels of corn to be cut up for fodder. He cuts up the stalks after threshing with a cradle, and after drying packs them away in alternate layers with dry straw. The cattle eat both stalks and straw, which he justly remarks is a much better way than to burn the straw in the Spring to make room for the plow. Had this been extensively done last year, we should not have heard of thousands of cattle perishing at the West for want of food.

Salsify.—M. E. M., wishes a recipe for pickling this vegetable. If any subscriber has one will he or she please forward it for publication. We are not aware of its being pickled, nor do we think it particularly desirable, as, with proper care, it may be had in a fresh state from September till June.

Artificial Honey.—J. P. P., of Randolph Co., Mo. Don't send your dollar for any secret recipe for making artificial honey—nor for any other secret pre-

scription; 999 in a 1,000 of them are humbugs. Save your money to buy a genuine honey manufactory—a good swarm of bees. "A subscriber" writes us that "he invested a dollar and got the following: Dissolve 20 lbs. of coarse sugar in 3 quarts of warm water. Stir into it one-fifth ounce of cream of tartar first dissolved in a little water, and also five or six pounds of good honey, and half a teaspoonful of essence of peppermint. Boil the whole slowly for 12 minutes, stirring it all the time, and your 'first-rate' honey is complete—30 lbs. of it." Any one can try this who has a notion that way. We presume it is as good as any recipe offered at any price.

Dielytra Spectabilis.—NAMING—HARDINESS.—Our valued correspondent, N. Goodsell, of New Haven, N. Y., asks if our printer did not make a mistake, on page 136, in the name of this plant, and suggests that its true name is "*Dielytra*." We believe not. The word is derived from two Greek roots,—*dis* and *elytron*, or *elutron*. "*Dielytra*" appears in one or two of the older botanical text books, but it was doubtless a typographical error there, the *c* having been accidentally substituted for *e*—a very common mistake, as printers well know, and one which has caused some amusing blunders. The *Dielytra spectabilis* is perfectly hardy, and it should be found in every garden, even the smallest. The native species, *Dielytra eximia*, resembles the *D. spectabilis* somewhat, but is much less beautiful. Mr. Goodsell is right in his suggestions that Generic names of plants should commence with Capitals, and specific names with small letters, ("lower case," as the printers say,) except when the specific name is derived from a proper name.

Bee Moths.—"A Subscriber" of Tazewell County, Ill., says he is in a fine country for bees, but they can not raise them successfully because of the "Bee-Miller," and inquires what they can do. If he and others will find a series of articles on bees in our successive numbers. As a direct answer, however, we will here say:

(1) *Get acquainted* with the moth and the worm, so as to know how they look. The female moth is larger than the male, and quite different, of a dirty brown color, keeping still all day long and looking much like a sliver of an old board. Toward evening she may be found flitting around the entrance of the hive. She is the author of mischief in laying her eggs within the hive, and her progeny of worms devour and file the comb. (2) *Put your hand on every moth* you see around the hive. (3) *Set dishes* of sweetened water and vinegar among your hives, and every morning kill the moths entrapped in them by night. (4) *Disturb moth-proof hives* for which great claims are made; but take care to have all hives made with tight joints, and with no open seams outside or inside. (5) *If the moths get the upper hand* in a weak hive, expel the bees, and join them to another stock. (6) *Keep no feeble swarms* or abandoned sheets of comb as *nurseries* for the worms. (7) *Lift the hives* at times, and with a sharp stick crush any worms that may be found in the corners, or cracks, or on the bottom board.

Covering Bee Hives.—"A Subscriber" asks why it was advised in the May number that a hive of bees should be inverted, if it was to be carried some distance. He would "remove it carefully from its place, right side up, set it on a cloth or blanket, and carry it to the place of destination." The danger would be that he would smother the bees, if the cloth fitted tightly to the hive and the hive were placed on a wagon or wheelbarrow. The great object of inverting is to insure ventilation. It may be done without difficulty in Spring, not so well in Summer.

Chestnut and Walnut.—To C. P., of Illinois. The American Chestnut is a fine ornamental tree, to say nothing of abundant crops of sweet nutritious fruit. It flourishes on a variety of soil, and grows spontaneously, over a wide territory. It has been cultivated as far north as Maine with success. A light soil suits it best, and its favorite localities are upon high grounds, hill and mountain sides. The English Walnut, (*Juglans regia*), better known as the Madeira nut, is quite extensively cultivated by nurserymen. It makes a noble ornamental tree, bears a good fruit, and is perfectly hardy in this latitude. Like the chestnut, it does best on a dry rolling soil. Both would doubtless flourish at the West, especially upon elevated lands.

Apple Substitutes.—M. Joslyn, of Cedar Co., Iowa, asks "if we know of a more acceptable substitute for apples as table sauce, than the tomato, gooseberry, raspberry, strawberry, rhubarb, currant, &c.?" These are all excellent, particularly the strawberry in its season, and out of season, if well preserved, uncooked in sealed cans. We would not "substitute" these for the apple, but have them all, and the apples too.

Apples and Pears, Hardy.—J. G., of Springfield, O., says the last two winters have been very severe upon fruit trees, and wishes a short list of Apples and Pears which will prove hardy in his vicinity. The following are both hardy and valuable.

Early Apples—Early Harvest, Early Bough, (sweet), Red Astrachan, William's Favorite, Benoni and Gravenstein. Fall varieties—Alexander, Fall Pippin, Jersey Sweeting, Monmouth Pippin, Porter and Rambo. Winter varieties—Baldwin, Danver's Winter Sweet, Jonathan, Newtown Spitzenburg, Rhode Island Greening, Yellow Belleflower, Newtown Pippin and Black Gilliflower.

Summer Pears—Bartlett, Bloodgood, Madeleine, Louise Bonne de Jersey, Onondaga, Rostrezer and Tyson. Autumn Varieties—Beurré Diel, Buffum, Dix, Fondante d'Automne, Flemish Beauty, Onondaga and Seckel. Winter Varieties—Easter Beurré, Glout Morceau, Lawrence, Vicar of Winkfield and Winter Nelis.

This list might be extended much further, but the above are sufficient for ordinary culture.

Apples in Maine.—A Maine correspondent says that "just to hit Brother Bidwell a little, 'a poor shack in luck' on a small scale, away 'Down East' close to the jumping-off place," last year sold \$505 worth of apples from less than 1½ acres, and that, too, though he made a bad bargain in selling them at \$2 25 per barrel.

Naming Grapes.—C. Dikeman, Scott County, Iowa. The "Charter Oak," was so called from the famous old Charter Oak, of Hartford, but is a label upon the name, as the grape is not worth growing. The "Diana Grape," was named after its originator, Mrs. Diana Crehore, of Boston. The "Isabella," also originated by a lady, is so called in honor of Mrs. Isabella Gibbs. The "Rebecca," the most recently introduced is named after Mrs. Rebecca Peake, of Hudson, N. Y., on whose ground the first vine of this variety was discovered.

Eggs—Pickle for.—W. S. T., of Hampden Co., Mass., will find the following a good pickle. Eggs are now being taken from it in a sound state which were put away last season. Dissolve 4 quarts unslacked lime and 4 quarts salt in 8 gallons of water and pour this liquid upon the eggs, packed in a water tight barrel or keg.

Gapes in Chickens.—J. M., writing from Onondaga Co., N. Y., says he has used the following preventive with complete success for a series of years. "Mix a little fresh ground coffee with corn meal and feed in the morning three times a week."

Watering Flowers.—To J. G. After the recent superabundant natural watering, flowers will need but a little for a long time. Water only when the ground becomes dry. Evening is the best time to apply it.

Brooklyn Horticultural Society.—For membership, &c., apply to either of the following officers: J. W. Degrauw, President; J. E. Rauch, Cor. Sec.; Jas. Parks, Rec. Sec.; M. Brandegee, Treasurer.

Lightning—Balls on Cattle's Horns.—A. R. Vail, of Dutchess Co., N. Y., inquires if the metallic balls on cattle's horns attract lightning, and thus endanger the animals. We think not. A round knob set on a poor conductor of electricity like horn can have little or no effect of this kind. The animals referred to would have been just as likely to have been killed without the "brass ornaments."

Whale Oil Soap.—In speaking of this mixture as a destroyer of the cherry slug on page 135 of last month's *Agriculturist*, an error occurred in the quantity of water to be used. It should be one pound of soap to seven and a half gallons of water. If much stronger than this, the plants will be injured by the application.

Subsoil Plow.—D. W. Wilson, of Clinton. The ordinary subsoil plow in common use is the best. Mapes' Improved Subsoil or Mole Plow, so called, we do not consider valuable. There will doubtless be improvements in subsoil plows ere long, but the one in general use is very good. They cost from \$5 to \$9, and from that upward according to the size, "rigging," &c.

Breeding Colts.—A. L. Sayre, of this city, in a recent note, says: "Having had several discussions with farmers who are opposed to breeding colts on account of its unprofitableness, I wish to refer the matter to your columns. I would like a statement of all expenses of raising a colt of the best blood, say to the age of four years." This is an interesting question, and instead of answering it directly we will solicit the opinions, or rather experience of our readers on what we will call the "Colt Question." Who will respond?

Hedge Fences.—Jas. H. McNall, of Washington Co., Pa., writes: "I see in the *Agriculturist*, that it is necessary to leave a strip of land twenty feet in width on each side of the Osage Orange hedge fence. If it will do well by leaving that amount, people should be satisfied, for that is little loss of ground to what we sustain by keeping up timber land to make rail fences, and less than is shaded by the timber that is generally grown around the farm. Besides it would cost less to keep up the hedge fence when once made. It appears to me that if the hedge plants were set out without having the centre

roots cut they would bear more breaking of the side roots. Would it not do as well to drill the seed as set out the plants where the fence is intended to stand."

Mignonette.—S. F. A. This plant is an herbaceous annual and no treatment that we are aware of can materially alter its habit. We do not think it can be grown to a woody shrub. It is well suited to pot culture through the winter when sown in August or September. A new variety has been cultivated for a year or two past in England of a larger growth, but resembling the common "odorata" in habit, growth, &c.

Crows.—J. F. of N. J., says the crows were in the habit of robbing his hens' nests which suggested the idea of an infusion of arsenic inside the egg. The result was that dead crows were found in the vicinity. This specific need not be confined to crows. Rats, skunks, &c., should be treated in the same way.

Budding and Grafting.—G. S., of Augusta, Ill., will find the information he desires on budding in the present number. Grafting will be discussed at the appropriate season. For a treatise on the above, and the general cultivation of fruits we can recommend the standard work of A. J. Downing, entitled "Downing's Fruits and Trees of America." Retail price \$1.50.

Indian Corn—Early and late Planting.—Our Waterloo Correspondent writes: Those basket remarks on my experience in Indian corn culture are true, if it is a good warm corn season, with no trying drouths; but my theory will succeed in all seasons. As to having to plant corn twice over, I never yet encountered such a dilemma. I take it that no corn sets in the ground in a well underdrained field, if not planted before the tenth of May. I planted corn and sorghum on that day, this cold season and have now, 5th June, what the southrons call a "good stand." The sorghum has a darker and much narrower leaf than King Philip corn. If early planted, corn does not grow at the root when the leaves are chilled and stationary. Why does it grow so much faster than later plants which have not been thus retarded by cool weather when hot weather comes. Experiment not only proves this, but also that early planted corn stands a drouth much better than late planted.

NOTES UPON VALUABLE BOOKS.

[Purchasing Books.]—Book selling is no part of our business, and we would prefer to have all our readers get such works as they desire directly from the publishers, or from a regular book-seller. But many are remote from book stores, and are cautious about sending money to unknown publishers. To accommodate such, we will at any time be happy to procure any desired book, especially on any subject treated of in the *Agriculturist*. As a general thing we can send any book by mail *post-paid* on receipt of the regular retail price—the discount allowed us by publishers being just about enough to cover the cost of mailing.]

American Short-Horn Herd Book—Vol. 3.

This valuable, indeed indispensable work to breeders of Short-Horns, is now issued, by its compiler, Lewis F. Allen, Black Rock, N. Y.* This third volume is more extensive than the second, which was issued in 1855, and contains about thirty-five hundred pedigrees, including nearly every Short-Horn herd of note in the United States and the Canadas. It is richly illustrated with upwards of a hundred fine cattle portraits, among others, those of the famous bull "Comet," bred by the late Charles Colling, of England, in 1804, and sold at his great sale for a thousand guineas; and the cow "Duchess," calved in 1800, bred also by Mr. Colling. In the portraits are shown the best cattle of half a century ago. Short-Horn cattle are now an American institution, and on no soils, and in no climates, do they give greater promise than ours. They are the ornament of the gentleman's park, and the material for the superior beef and dairies of our farmers. Every cattle breeder should have the Herd Book; and, even if he does not breed Short-Horn cattle, he will get many a capital idea from its pages, and learn how the *beau ideal* of bovine excellence is obtained by close attention, and the exercise of good taste in the selection and propagation of this noble race of animals. The book is beautifully got up in paper, printing, plates, and binding, and will make a valuable addition to every rural library in the country. We commend it to public examination.

* Those desiring the Herd Book, can address their orders to L. F. Allen, as above. It is on sale, in this City, at the Agricultural Warehouse of R. L. Allen, and at C. M. Saxton & Co.'s Agricultural Bookstore.

HOOPER'S WESTERN FRUIT BOOK: A compendious collection of facts, from the Notes and Experience of successful Fruit Cultivators, arranged for practical use in the Orchard and Garden. By E. J. Hooper, formerly editor of "Western Farmer & Gardener." Cincinnati, MOORE, WILSTACH, KEYS & Co. 333 pages. Price \$1.

The preface to this work is written by Dr. Warder, and much of the original matter bears the impress of having been derived from the same fountain-head, though the

Doctor would hardly be held responsible for the many Yankeeisms, and much of the style which is scarcely Addisonian. Note a single example on page 132: "The Duchesse d'Angouleme, should be cultivated only on the quince, and no where else." We notice that general descriptions of a genus, instead of being at the head of each genus are scattered among the varieties; thus, in the description of the Heathcot, page 165, we have the general qualities of pears, while under the Winter Nelis, page 202, we find a description of the best way to cultivate on the quince. The descriptions are generally good, although in some instances unjust; for example; of the "Fall Bough," the book says: "Little known and not approved," while, at least hereabouts, it is well known and esteemed as of first-rate quality. Stetson of the Astor House finds that his guests appreciate it by eating all he can get for them. The "Willis Sweet" is not mentioned, while in many places it is counted as one of the best baking apples if not the best; so much so, that peaches will often be left untouched at the table while Willis' Sweets are there well baked. For eating with milk, its sugary richness is unequalled. However, the book is prepared especially for Western readers, and is scarcely adapted to Eastern localities. Dr. Warder's articles on "treatment" are very good in any place, particularly respecting low set trees of every sort, and we would apply the same treatment to forest trees. We regard Dr. Warder as one who combines, perhaps better than any other pomologist, the double advantages of theory and practice, and we wish he had written the whole book or that he would prepare another such as one as he can bring out. Taken as a whole, we do not find this work at all superior to those of Barry, Elliott and others, except in its quotations from different authors in the descriptions. It is much behind Barry in the details of treatment taken from French works. The only way of getting a really good "Fruit Book" is through a committee of the Pomological Society, representing different sections of the country, with some one good pen to throw over the whole the life and spirit which Downing infused into all his writings. We throw out this hint to the Society and do not despair of yet seeing such a work published.

After all, there is no better fruit book as far as it goes; than that of A. J. Downing, and if Chas. Downing, who has more pomological knowledge, and more modesty than belongs to most fruit men, could be induced to bring his brother's book down to the present time, we should probably have about all that we specially need now on this subject. Before leaving we must add, however, that we value Mr. Hooper's work, and it will be useful to all fruit growers, not only as a Western book, but because in it we can find so readily the opinions of various pomological bodies.

Artificial Culture of Fish.

A Treatise on the Artificial Propagation of Certain Kinds of Fish, with the Description and Habits of such kinds as are the most suitable for Pisciculture. By Theodatus Garlick, M. D., Cleveland, O. Thomas Brown, Publisher.

This is a neat volume of 142 pages, comprising a series of papers which first appeared in the Ohio Farmer within a year or two past, with some emendations by the author, and detailing the theory of artificially propagating several kinds of fish, after which his own practice has been successful. It is written in a plain, unambitious style, remarkable more for good sense and close observation than the graces of scholarship, yet without instructive, and to the point. Although the author describes several varieties of pond or still water fish which may be easily domesticated—such as the bass, perch, roach, sunfish, &c.—his favorite is decidedly the brook or speckled trout, where the waters are congenial to them. In artificially propagating and domesticating this beautiful fish, Dr. Garlick has been eminently successful. We had the pleasure of inspecting numerous specimens of his trout, of different ages, while exhibited in their large glass cases or tanks, in September last, at the State Agricultural Exhibition in Cleveland. In these cases, with fresh cold water slowly percolating through them, were some hundreds of fish from two inches in length to those of a pound weight, perfectly healthy, of brilliant color, thrifty and active. They were taken from his own propagating waters—artificial ponds fed by springs—and connected with each other by planked flumes or conduits, guarded by weirs and net-work, giving him entire control over both fish and waters. The book is a detail of successful experiments and practice, as well as theory, and therefore is to be received as authority.

We would, indeed, have been better content had the ingenious author set out on a more extended plan of instruction, with a wider scope of description in the varieties of fish for domestication, illustrated with the manner of making ponds, and converting our vagrant waters with which the country abounds, into stores where myriads of edible fish may be propagated for domestic use, and given at length the domestic habits of the most useful among them. Such a work, now that we have the mode of propagation understood, is much needed, and we cannot

but hope that one so well prepared as Dr. Garlick appears to be, from the production of this little volume, will give us the full measure of instruction which we require to carry his theory into general practice. There are thousands of farms where valuable streams flow lifelessly along, or the purest springs issue in abundance from their hillsides, which may be made capable of yielding quantities of delicious fish of many varieties, at small expense on the part of their proprietors, and afford abundance of excellent food at almost all seasons for the table.

It is passing strange to us, that among the many items of domestic rural economy which have engaged the attention of our people, fish culture has been so neglected. It is simple in theory, and easy in practice, and, as it appears to us, only needs the application of a master spirit in its development to set those who have the opportunity right at work to accomplish the result in good earnest. Our State Agricultural Societies have for three years past offered a liberal premium for a work of the kind adapted to popular use, and, strange to say, no treatise has yet made its appearance in response. We know several accomplished pens that need only to set themselves about it to give the public all the instruction they need, and trust that another year will not pass ere we can notify our readers that so welcome a volume is offered to them. We hope that Dr. Garlick may be induced to follow his brief volume by another fully suited to the exigency, and promise him in advance, not only the thanks of all liberal-minded men, but, in our judgment, a solid pecuniary recompense for his labor so worthily bestowed.

THE BEST DICTIONARY.—It would seem almost superfluous to speak of the value of a work of this kind, but next to the Bible, there is no book so important as a good dictionary—one of the kind we have in mind—and such an one as we keep three several copies of—one for general family use, one for the sanctum or office, and one for the sanctum sanctorum or private study, and were the book less bulky, we would have a fourth copy for a *vade mecum* or pocket companion. We refer of course to the Unabridged Webster's Dictionary, published by Messrs. MERRIAM, of Springfield, Mass., which we consider the most perfect thing of its kind in the world. When this work was first issued, during Noah Webster's life, we paid \$14 for a copy and thought it money well laid out; now a more complete edition is sold for \$5 or \$6. This is really a family Encyclopedia, as it not only directs how to spell and pronounce all the words in our language, including Geographical, Scripture, and Greek and Latin names, but it also gives such full definitions and explanations of words and phrases as to be a valuable source of information upon almost all topics. Daniel Webster, who by the way, was not, we believe, a relative of Noah, the Dictionary Man, once said: "I possess many dictionaries and of most of the learned and cultivated languages, ancient and modern, but I never feel that I am entirely armed and equipped in this respect without Dr. Noah Webster's book at command." Farmers, let the boys have a patch of ground to cultivate "on their own hook," if they agree to apply the proceeds to purchasing an Unabridged Webster's Dictionary. We have alluded to this work before, and do voluntarily so again, our attention having been called to the matter by seeing an advertisement of it in our last number.

Business Notices.

Forty Cents a Line.

HEDGES' CHINESE SUGAR-CANE MILLS.

Three sizes of Horizontal Mill, with gearing set in an iron frame, ready to attach belt or gear wheel from Steam, Water, or Horse Power.

PRICES AS FOLLOWS:

For 3-roller mill with horizontal rollers, 12 inches diameter, and 24 inches long, \$300.

The same size mill, vertical, with means of fastening a beam or lever overhead, so as to propel by horses, with out any additional machinery, \$175.

For 3-roller mill, with gearing, &c., as above described, horizontal—rollers 8 inches diameter and 12 inches long, \$150.

None of this size, vertical, are made.

For hand mill of 3 rollers, 5 inches by 6, geared and furnished with balance wheel and two cranks, \$50, in iron frame.

We make vertical mills, each with 3 rollers, 11 inches diameter, of any length of roller, from 12 inches for \$100, to 30 inches for \$250. The 12-inch mill will give one gallon of juice per minute, with two horses. Others in proportion.

Cast iron boilers from 15 to 75 gallons.

TERMS—Cash. 30 days required for completion of orders.

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Cincinnati, Ohio.

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Philadelphia, Pa.

Editor's Notes—Crop Prospects—Horse-hoes, &c.

We write this, our last item, on the 20th of June, in the south-western part of Ohio, from a point where we can look out upon the fertile domains of a large number of our readers, who, by the way, are not aware of our presence. We have during a week or two past gone over the farms of numerous readers of the *Agriculturist*, preferring to make observations and gather facts without stopping for the formalities of "making an acquaintance." We have, in this way, sometimes drawn out useful hints and suggestions in regard to what kind of information is most needed in these pages, which would have been given far less freely, had it been known that our editorial sanctum was in hearing distance. Perhaps some of the Ohio boys, on reading this item, will recall a stranger in the corn-field who asked all sorts of questions about their method of growing corn, and who was vain enough to think he could show them a thing or two about handling the hoe and cultivator. Two boys on the Tuscarawas River will doubtless remember how all three of us scud across that 400-acre corn-field to get under a big tree out of the way of a sudden shower. We remember one of them saying, "it rained every day this year, just as easy as open and shut." In the valley of the "Little Miami" River we dropped over into a corn-field where there were eleven horse cultivators all at work near together. The work of one of the three boys we took occasion to praise a little, and it would have done any one good to see how nicely the next rows were worked. Moral—(to parents).—A word of praise is often more effectual than a reproof, or a blow.—Another of these boys informed us that "he read every number of the *Agriculturist* all through, and that when he got to manage a farm he should drain every field any way." We could hardly resist the temptation to break over our rule, and grasp that boy's hand and introduce himself. We'll do it now. But enough of these matters for this time.

From our office to this point we have journeyed in a zigzag course of over 1,300 miles, always keeping an eye out upon the growing crops, and taking every possible opportunity to talk with farmers. To sum up the result of our observations thus far, we may say, that all crops are behind time, but the prospect is almost universally favorable. This is particularly true of grass. Wheat covers much less space than in any former year, except in some of the south-central counties of Ohio, where there appears to be no diminution but rather an increase of surface sown. On clay and low lands the winter-kill has produced many bare spots, but generally the fields present a full, even growth. In southern Ohio, a majority of the wheat is now headed out, and the heads are of full size.

In almost every section we have visited we find a larger surface devoted to oats and barley than heretofore, but Indian Corn is becoming from year to year more and more the great staple crop. Through the valleys of the Tuscarawas, Muskingum, Little Miami and Great Miami rivers, the rich fertile bottom lands are now, as in years past, devoted mainly to corn, no rotation or change of crop being needed. For dozens of miles one will scarcely see anything else but a succession of these fields in the foreground, while back from the river at a distance of half a mile, or less, to three or four miles in some places, the hills are covered with wheat or clover. If we were called upon to prescribe for a pale, desiccated denizen of the City, we would at once advise him to take a trip from east to west through central Ohio at this season, say from Alliance, or Bayard, or Steubenville to Dayton. Two months at Saratoga or Newport is not worth mentioning in comparison. Whither to journey from Dayton we can talk better about hereafter, when we have been there.

Just now, corn growers find it difficult to get their hoeing done. It rains almost every day, and has done so for weeks past. In hundreds of fields the weeds are choking the corn. Unless we have fairer weather soon, many fields will be greatly injured for want of being worked. The horse-cultivators are worth their weight in silver now, and whoever makes even the slightest improvement upon the present form of this implement, will confer an immense benefit upon the whole country, and deserve a rich reward. Let the horse-hoe inventors tax their ingenuity still farther. There is a wide field before them.

Sugar Cane Mills.

In our advertising columns will be found the announcement of Messrs. Hedges, Free & Co. We have to-day (June 19) visited their manufactory in Cincinnati, and examined the mills of different forms and sizes. Though unable to see them in actual operation for want of materials to work with, we think they promise to excel any other form of pressing roller we have examined. Of the two forms we give the decided preference to the vertical or upright cylinders, as these dispense with the additional horse power apparatus necessary to drive the horizontal cylinders. The \$100 size, 11 inches in diameter and 12 inches in length of cylinder will answer for ordinary pressing on a moderate scale. For smaller experimental

operations the hand mill will be sufficient. We tried one of these to-day with dried cane from the South. The pressing was well done, but we should judge that it would require two strong men to turn it for any length of time. It is small, compact, and low priced, and for limited trials will perhaps be all that will be required. Were we confident that a large business would be done in manufacturing the sugar from the Chinese sugar cane, we should say by all means get one of the larger mills. The smallest size can be readily attached to the common Horse Power of a thrashing machine by means of a band wheel. Further information can be obtained by addressing the manufacturers. We learned from them that they have, just now, calls for about all the mills they can make, but they hope to be able to supply all reasonable applications.

The lateness of the season, and the continued rains will have a decided tendency to retard experiments with the Sugar cane this season. We have met with several persons who were not able to plant the seed until June 15th and later, while others put it into the ground just before long cold rains, and lost a part of their seed by rotting.

Back Volumes.

We have now spare copies of Volumes XII., XIII. and XIV. only. Price unbound, \$1 per volume, or \$1 25 if prepaid by mail. Price, bound, \$1 50 per volume, not available.

Advertisements.

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By the column or half column, \$30 per column for the first insertion and \$25 for each subsequent insertion.
For Business Notices Forty cents a line.
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ROBERT SEARS, Publisher,
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CHINESE SUGAR-CANE SEED, 50 Cents per Pound.

The subscriber has a few hundred pounds of the best Chinese Sugar-Cane Seed (called also "Chinese Imphee," "Sorgho," &c.), which will be sold during the remainder of the season, in small or large quantities, to suit purchasers, at seventy-five cents a pound.

This seed was grown by Leonard Wray, Esq.
R. L. ALLEN, 189 Water-street, New-York.

NORMAN HORSE.—YOUNG DILIGENCE

will stand for a limited number of mares the ensuing season. He was raised by the subscriber, and is now (June 1) 25 months old, 16 hands high, and 5 feet 10 inches girth. He was sired by the imported horse Diligence, and is of chestnut sorrel color.
JAMES A. ECKERSON.
TAPPAN, Rockland Co., N. Y.

ALDERNEY COWS FOR SALE.

TWO COWS WITH CALVES—ONE Bull Calf, one Heifer do.; one Heifer, 15 months old; one very fine Bull; were imported some sixteen months ago, and will be sold reasonably.
Address: GIDEON THOMPSON,
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for sale at a bargain. He is one of the best bred Bulls in the country, good size, fine form, &c. For pedigree, see (341) American Herd Book, Vol. 2d, page 153.
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A FULL ASSORTMENT OF THE choicest Foreign and Domestic Field and Garden Seeds, raised expressly for my trade. Especial care is taken that all seeds are fresh and genuine to the kind. For sale, wholesale and retail.

Chinese Sugar Cane Seed.....50 cents per pound.
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Red Top do.....75 cents do.
Carrot—Long Orange and White Belgian.
Beet—White Sugar, Manifold Wurtzel.
Spring and Winter Vetches, Broom Corn.
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Clover—Red, Dutch White, Lucerne, Alsike, Crimson Sweet-scented.
Millet—Extra clean, for sowing.
Osage Orange, Yellow and Honey Locust.
Strawberry, Currant and Raspberry Seed.
Buckwheat of superior quality.
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Grafting Wax, Whale Oil Soap, Guano and Superphosphate of Lime, in small packages of 25 cents each.
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For sale by
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"MILLER'S PLANTATION SAW

MILL" is the only Mill in the world that can be shipped perfectly built and ready for running. The saw is fitted in its place, and every wheel and pulley in their proper position. The purchaser has no building or fitting up to do on receipt of his Mill—simply to drive, say eight or ten stakes to bolt his bed-pieces to brace his Mill firmly—put in his team, and commence sawing. There is no digging—no hauling up of logs—and the planter or lumberman need not encounter the danger that always attends small portable engines and boilers, as this Mill can be operated to advantage by horse-power—six horses giving power enough to manufacture 2,500 feet of lumber in twelve hours. A Mill is kept constantly running in this city for the inspection of buyers. Price \$300—with extra machinery for horse-power, \$650.

T. MILLER, 120 William-st., New-York.
ALBERT PALMER & J. H. HUNTINGTON,
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attention of farmers is called to Ingersoll's New Premium Portable Hay Press. This Press combines greater power and portability, requires less labor, occupies less space, and costs less money, than any other machine for baling hay ever offered to the public. It is equally convenient for pressing cotton, hemp, hops, broom corn, rags, husks, &c. Full particulars will be furnished upon application, by letter or otherwise, to
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of reliable quality and various descriptions, among which are those particularly suited for Horticultural purposes, which register the coldest and warmest degree of temperature during the 24 hours, in the absence of the observer. For sale by
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Or tresses, curling and golden—
Is the certain result—without chance or doubt—
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The immense sale of LYON'S KATHAIRON—nearly 1,000,000 bottles per year—proves its excellence and universal popularity. It restores the Hair after it has fallen out, invigorates and beautifies it—making it soft, curly, and glossy—cleanses it from all Scurf and Dandruff, and imparts to it a delightful perfume. The Ladies universally pronounce it the finest and most agreeable article ever used. Sold by all dealers, everywhere, for 25 cents per bottle.

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Proprietors and Perfumers,
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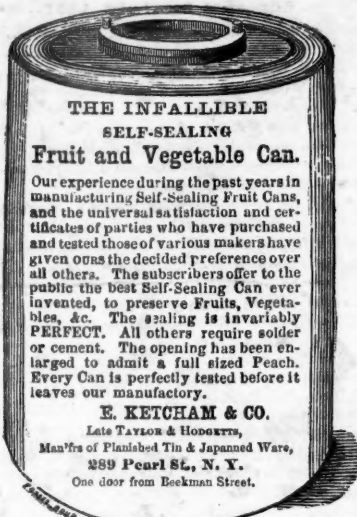
INDEPENDENT EXAMINER. Poughkeepsie, N. Y., H. A. GUILD, Editor and Proprietor, is now the Official Organ of the Sons of Temperance of Eastern New-York. It is a large-sized, handsomely printed weekly paper, advocating fearlessly and boldly the Great Cause of the day. The Examiner should find its way into every family, and into the hands of all who wish early and accurate temperance information.
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TAYLOR & HOGGETT'S INFALLIBLE SELF-SEALING FRUIT CAN,

WITH BURNETT'S ATTACHMENT.

Patented August 21, 1855.

It has long been a desideratum to preserve Fruits by some cheap method, such as would keep them fit for domestic use, a number of years. The expense of preserving with sugar is a serious objection. Free access of atmosphere causes the decomposition of vegetable matter. It is obvious that the exclusion of it must prevent this effect from taking place, and that, consequently, if Berries, Fruits, Vegetables, &c. are completely kept from the contact of air, they cannot spoil. To effect this, the only safe and reliable article is

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It is so simple in its construction, that any one can close Fifty Cans an hour without the aid of a tinner; it requires neither Solder, Cement nor Wax. The article is very strong, and will last a number of years. The aperture is sufficiently large to admit a full sized peach.

Apricots, Plums, Pears, Cherries, Peaches, Strawberries, Raspberries, Blackberries, Tomatoes, Green Peas, Green Corn, Figs, Asparagus, Rhubarb or Pie Plant, and in fact each and every kind of Fruit and Vegetable, can be preserved for years in their fresh state, in any climate.

Full directions for putting up the various Fruits and Vegetables accompany the cans.

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ARE ACKNOWLEDGED to be the only safe and reliable Self-Sealing Cans in the market. They have now been in use for the past three years, and Fruit and Vegetables preserved in them have been subjected to severe tests by change of climate from Canada to California, and when opened the contents are found in perfect state of preservation, with all the natural flavor as if just put up. By these Cans, Fruit of all kinds may be preserved perfectly fresh without the use of Sugar. The process is very simple and the cans are easily closed and opened by a wrench made for the purpose—full directions for use accompany the cans.

Quart Cans, per dozen \$2 50
Half Gallon Cans, per dozen 3 75
One Gallon Cans, per dozen 5 00
Wrenches, each 06

WELLS & PROVOST, Sole Proprietors,
No. 215 Front-st., New-York.

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HAY AND CATTLE SCALES,

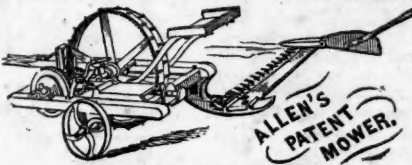
FOR WEIGHING Loaded Wagons, Carts, Live Stock, Produce, &c. More than Four Thousand of these convenient and durable Scales have been put up by us in all parts of the United States and the British Provinces. We also have more than One Hundred different modifications of

PLATFORM AND COUNTER SCALES, adapted to every required operation of weighing. Pamphlets with Cuts and Descriptions will be furnished upon application, by mail or otherwise.

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TO PRINTERS—For Sale a quantity of Type (Pearl to Pica); Cases; Double Stands, (\$3 50); Stone; Galleys; Leads; Rules, with a large number of Card Folds, Cuts, Borders, Cabinet, &c., cheap. Apply at this Office.

THE BEST MOWING MACHINE IN THE WORLD.



**ALLEN'S PATENT IMPROVED
MOWING MACHINE,
AND COMBINED MOWER AND REAPER;
STRONG, SIMPLE IN CONSTRUCTION, NOT
LIABLE TO GET OUT OF ORDER;
COMPACT, LIGHT, EASY OF DRAFT,
PERFECTLY SAFE TO THE DRIVER,
AND MAY BE WORKED WITH A
SLOW GAIT BY HORSES OR OXEN.
NO CLOGGING OF KNIVES.**

Works well on Rough Ground, also on Side-hills, Salt and Fresh Meadows, &c., and in any kind of lodged Grass and Clover.

WARRANTED TO GIVE ENTIRE SATISFACTION.

MANUFACTURED AT
**THE AGRICULTURAL IMPLEMENT
MANUFACTORY,**

And for sale at the Warehouse and Seed store of
R. L. ALLEN, 129 Water-street, New-York.

SEE WHAT FARMERS SAY OF IT.

We, the subscribers, having seen your (Allen's) Patent Mowing Machine in use, both in heavy and light grass and clover, and in places badly lodged, speak of its performance with universal approbation. It may be drawn by a pair of light horses with ease, cutting wide and perfectly clean, and leaving the grass spread in the best possible manner. We also believe that more grass may be cut in a day, and in a better manner, with your Mower than with any other in this vicinity. We therefore recommend it as the very best Mower now in use.

C. P. Treat, E. W. Taylor, Horace Pomeroy,
S. C. Douglass, Leicester Moffitt, Trueman Clark,
Wm. L. Perkins, Lyman Myland, Wm. McBride,
Alanson Moffitt, H. S. Pomeroy, Harman Newell,
Michael Barnes, George King, C. L. Taylor,
David Knapp, George Boughton, L. T. King,
D. G. King, R. M. Allen, S. T. Gilmore,
Isaac Watts, C. A. Wells, Joseph Hodges,
Robert Treat, C. A. Kellogg, Riley Root,
Peter Hitchcock, S. B. Hollis, Stephen Searles,
L. T. Willmot, Calvin Moffitt, Myron Beard,
Carlton Clapp,
Geauga Co., Ohio, Nov. 20, 1855.

We have used Allen's Patent Mower during the late harvest, and find it to work well. It is of easy draft, and comes quite up to our expectations.

Tunis V. Conover, James Woole, Dr. Wm. Conover,
Henry Weathers, Joseph C. Conover, Henry Robinson,
Jacob Schenck, Mrs. Schenck, H. S. Conover,
John Davidson, James House, D. Schenck,
Mariboro', Monmouth Co., N. J., Nov. 20, 1855.

The subscribers having seen Allen's Patent Mowing Machine in use, both in heavy and light grass of different sorts, are prepared to speak of its performance with the highest approbation. It was drawn by a pair of light horses with apparent ease, cutting a wide swath perfectly clean, whether the grass were standing or badly lodged, and leaving it spread in the best possible manner. This was done during and immediately after a heavy shower, and without any clogging of the knives.

Marshall P. Wilder, Pres. U. S. Agricultural Society.
Charles C. Sewell,
Boston, Mass., Nov. 26, 1855.

The undersigned were present at a trial of Allen's Patent Mower on the farm of Jesse Jewell, Esq., and were much gratified with its operation. It cuts close—no clogging—and is light for a span of horses in ordinary mowing. It is a strongly made and excellent machine.

Lee Taft, Ira Bushnell, C. M. H. Ferguson,
A. M. Hawkins, J. Jewell, Anson Wentworth,
Starksboro', Vt., Aug. 22, 1855.

The undersigned have seen Allen's Patent Mowing Machine tested in different kinds of grass, and can recommend it as a most reliable machine, which can not fail to give satisfaction in any kind of grass. We consider it contains more advantages than any other in use.

Patrick Durmedy, Whitestone, L. I.
George L. Smith, do.
Henry Allen, Great Neck, L. I.
Lucius M. White, Strattonport, L. I.
M. Johnston, Great Neck, L. I.
Long Island, N. Y., Oct. 15, 1855.

We have each used one of Allen's Improved Mowers the past season, and testify that it is an easy working, durable, and every way satisfactory machine.

James Jacobus, Stilltown, Morris Co., N. J.
Isaac Van Dine, Mountville, Morris Co., N. J.
Levi E. Kent, Rockaway Neck, Morris Co., N. J.
Abraham H. Husk, Fairfield, Essex Co., N. J.
Henry Francisco, Franklin, Essex Co., N. J.

The undersigned have used Allen's Patent Mowing Machine during the past harvest, and can recommend it with confidence to their fellow-farmers as a reliable mower—doing all it professes to do, and excelling any other mower known in these parts; and we believe we have seen all the most improved patterns. It does not clog, and will cut grass under water, if needed.

T. E. Porter, Wm. Dickinson, Chas. Wheeler,
W. A. Smith, John Bell, Edwin Porter,
T. P. Huntington, Geo. Gaylord, T. Granger,
Chester Smith, H. Burrell, T. Smith, Hadley,
E. Williams, G. Lyman, do.
Erskine, C. Merrick, Amherst, Mass.
Henry Parsons, David Dawson, Northampton, Mass.
M. Stebbins, Deerfield, Mass.
Royal Fowler, Westfield, Mass.

Hampshire Co., Mass., Dec. 1, 1855.

We have been much pleased with the Allen Mowers purchased from your agent. We consider it quite superior to other machines in lightness of draft, slow speed at which the team may work, compactness, ease of management, and safety to driver. It does not clog, is well made, costs nothing for repairs, and the spring on side-wheel and loose play of tongue are great improvements. We think you have, by far, the best machine made. David L. Fielding, Josiah C. Haviland, Darius B. Haight, Senior S. Northrop, Taber Belden, (Irene) H. Haight, J. Haviland, Jr., Joseph Belden, Jacob C. Haight, Richard Sherman, Jonathan Thorne, R. G. Coffin, James M. Martin, Jarvis Congdon, Jacob N. Haight, Daniel H. Lyon.
Dover Plains, N. Y., Nov. 1855

CHOICE FARM LANDS FOR SALE.

THE ILLINOIS CENTRAL RAILROAD COMPANY

IS NOW PREPARED TO SELL ABOUT
1,500,000 ACRES OF CHOICE

FARMING LANDS,

IN TRACTS OF FORTY ACRES AND UPWARDS.

ON LONG CREDITS, AND AT LOW RATES OF INTEREST.

THESE LANDS WERE GRANTED BY the Government to aid the construction of this Road, and are among the richest and most fertile in the world. They extend from Northeast and Northwest, through the middle of the State, to the extreme South, and include every variety of climate and productions found between those parallels of latitude. The Northern portion is chiefly prairie, interspersed with fine groves, and in the Middle and Southern sections timber predominates, alternating with beautiful prairies and openings.

The climate is more healthy, mild and equable, than any other part of the country; the air is pure and bracing, while living streams and springs of excellent water abound.

Bituminous Coal is extensively mined, and supplies a cheap and desirable fuel, being furnished at many points at \$2 to \$4 per ton, and wood can be had at the same rate per cord.

Building Stone of excellent quality also abounds, which can be procured for little more than the expense of transportation.

The great fertility of these lands, which are a black rich mold from two to five feet deep, and gently rolling—their contiguity to this road, by which every facility is furnished for travel and transportation to the principal markets North, South, East, West, and the economy with which they can be cultivated, render them the most valuable investment that can be found, and present the most favorable opportunity for persons of industrious habits and small means to acquire a comfortable independence in a few years.

Chicago is now the greatest grain market in the world, and the facility and economy with which the products of these lands can be transported to that market, make them much more profitable at the prices asked than those more remote at Government rates, as the additional cost of transportation is a perpetual tax on the latter, which must be borne by the producer in the reduced price he receives for his grain, &c.

The Title is Perfect, and when the final payments are made, Deeds are executed by the Trustees appointed by the State, and in whom the title is vested to the purchasers, which convey to them absolute titles in Fee Simple, free and clear of every incumbrance, lien or mortgage.

The prices are from \$6 to \$30.

INTEREST ONLY 3 PER CENT.

20 per cent. deducted from the Credit price for Cash.

Those who purchase on long credit give notes payable in 3, 4, 5 and 6 years after date, and are required to improve one-tenth annually for five years, so as to have one-half the land under cultivation at the end of that time.

Competent Surveyors will accompany those who wish to examine these lands, free of charge, and aid them in making selections.

The lands remaining unsold are as rich and valuable as those which have been disposed of.

SECTIONAL MAPS

Will be sent to any one who will inclose fifty cents in Postage Stamps, and Books or Pamphlets, containing numerous instances of successful farming, signed by respectable and well-known farmers living in the neighborhood of the Railroad lands throughout the State; also the cost of fencing, price of cattle, expense of harvesting, threshing, &c., or any other information, will be cheerfully given on application, either personally or by letter, in English, French or German, addressed to

JOHN WILSON,

Land Commissioner of the Illinois Central Railroad Co.
Office in Illinois Central Railroad Depot, Chicago, Illinois.

DOCTOR HOOFLAND'S

CELEBRATED

GERMAN BITTERS.

PREPARED BY

Dr. C. M. JACKSON, Philad'a, Pa.

WILL EFFECTUALLY CURE

LIVER COMPLAINT, DYSPEPSIA, JAUNDICE,
CHRONIC OR NERVOUS DEBILITY.

AND ALL DISEASES

ARISING FROM

A DISOR-

DERED

LIVER

OR

STOMACH.

Such as Constipation, Inward Piles, Fullness or Blood to the Head, Acidity of the Stomach, Nausea, Heartburn, Disgust for Food, Fullness or Weight in the Stomach, Sour Eructations, Sinking or Fluttering at the Pit of the Stomach, Swimming of the Head, Hurried and Difficult Breathing, Flattering at the Heart, Choking or Suffocating Sensations when in a lying posture, Dimness of Vision, Dots of Wells before the Sight, Fever, and Dull Pain in the Head, Deficiency of Perspiration, Yellowness of the Skin and Eyes, Pain in the Side, Back, Chest, Limbs, &c. Sudden Flushes of Heat, Burning in the Flesh, Constant Imaginations of Evil, and Great Depression of Spirits.

The Proprietor, in calling the attention of the public to this preparation, does so with a feeling of the utmost confidence in its virtues and adaptation to the diseases for which it is recommended.

It is so new and untried article, but one that has stood the test of a ten years' trial before the American people, and its reputation and sale is unrivalled by any similar preparations extant. The testimony in its favor, given by the most prominent and well-known physicians and individuals in all parts of the country, is immense, and a careful perusal of the Almanac, published annually by the Proprietor, and to be had gratis of any of his Agents, cannot but satisfy the most skeptical that this remedy is really deserving the great celebrity it has obtained. Principal Office and Manufactory, No. 36 ARCH-street, Philadelphia, Pa. And for sale by all Druggists and Store-keepers in every town and village in the United States and Canada.

MARKET REVIEW, WEATHER NOTES, &c.

AMERICAN AGRICULTURIST OFFICE,
New-York, June 22, 1857.

The Breadstuff trade has not extended much during the past month. The receipts from the interior, though curtailed by the irregular working of the Canals, have been pretty heavy, while receivers, who commenced the month with manifest reluctance to sell unless at advanced prices, closed it with an eagerness to realize upon their supplies, which has given the market a decided turn in favor of buyers. These have operated with unusual reserve, throughout the month, looking for increased arrivals, and lower prices. The demand has been mainly for home use, though for a while there was some speculation, while shippers bought very little. The general anticipation now is that there will be no scarcity of Breadstuff, and consumers are not anxious about securing supplies, as they do not apprehend any alarming rise in prices. We noticed that a small parcel of new flour, made from Georgia new Wheat, and received from Savannah by steamer, brought about \$11 per barrel, owing partly to the fact that it was the first lot of new Wheat Flour offered here this season. It was ground at the Carmichael Mills, Augusta, Ga., from white Wheat grown in that vicinity, and was deemed one of the finest samples ever offered here. The invoice consisted of ten barrels. No new Wheat has yet come to hand. Last year the first new Wheat arrived here on the 19th of June. We may expect some considerable lots of the new crop from the South very soon. Cotton is in better request at a shade higher rates. Our available stock of Cotton is now about 56,800 bales, against 52,300 same time last year. The receipts of Cotton at shipping ports, to latest dates this season, have been 2,858,918 bales, against 3,401,294 bales to the corresponding period of last season. The total exports of Cotton from the United States, so far this season, have been 2,051,376 bales, against 2,689,147 bales to the same time last season. The total stock on hand and on-shipboard, in all the shipping ports, at the latest dates, was 262,507 bales, against 269,076 bales at the same period last year. The stock in the interior towns, at the latest dates, was 24,581 bales, against 21,668 bales at the corresponding period a year ago. Provisions have been pretty freely purchased, but at generally reduced quotations. Coffee and Tea have attracted considerable attention at full and buoyant prices. White Sugar and Molasses have been lightly dealt in, owing to the high claims of factors. The receipts of Sugar have been extensive, and the supply of this commodity, now here, is unusually large. Hay has arrived and been sold more freely at decidedly easier rates. Hops are quiet, yet stiffly held, with a moderate supply available. Hemp and Grass seeds remain inactive and somewhat nominal in price. Rice is moderately inquired for at uniform quotations. Tallow is pretty brisk, but rather less firm. Tobacco is in light supply and slack request at full prices. Wool is in limited demand, and is heavy in price. Old fleece is nearly out of market, and old pulled is also quite scarce, yet this does not seem to have any effect on buyers. The new clip is coming forward slowly, and we hear of no important movements therein at any point of the interior. Speculation is rife, as to what will be the opening prices, but the general opinion seems to run against the maintenance of the high rates prevalent throughout the past twelve months, which is also rendered improbable by the indisposition of manufacturers to keep their mills wholly or urgently, at work, while manufactured goods meet with so little favor, and command such very poor prices as they do at the present time.

We annex a comparative list of the closing prices of the principal agricultural products, last month and this, showing the fluctuations since our previous issue:

	May 22.	June 22.
Flour—Com'n to Extra State	\$6 35 @ 6 75	\$6 00 @ 6 60
Common to Fancy Western	6 35 @ 6 70	6 10 @ 6 50
Extra Western	6 70 @ 10 00	6 50 @ 10 50
Fancy to Extra Genesee	7 20 @ 9 75	7 15 @ 10 00
Mixed to Extra Southern	7 20 @ 9 50	7 00 @ 9 75
Rye Flour—Fine and Super	3 65 @ 5 00	4 25 @ 6 00
Corn Meal	3 65 @ 4 15	4 00 @ 4 35
Wheat—Canada White	1 75 @ 1 90	1 80 @ 1 90
Western White	1 70 @ 1 90	1 75 @ 1 95
Southern White	1 70 @ 1 90	1 75 @ 1 95
All kinds of red	1 40 @ 1 67½	1 42½ @ 1 70
Corn—Mixed	88 @ 90	86 @ 87
Yellow	90 @ 92	88 @ 90
White	88 @ 92	89 @ 95
Oats—State and Western	56 @ 63	55 @ 65
Jersey	54 @ 58	57 @ 63
Southern	51 @ 55	53 @ 57
Rye	1 02 @ 1 04	1 20 @ 1 25
Barley	1 40 @ 1 60	1 45 @ 1 75
White Beans	1 81½ @ 1 93½	2 25 @
Black-eyed Peas, per 2 bush.	3 50 @ 3 75	3 50 @ 3 70
Cotton—Middleings, per lb.	13½ @ 14½	14 @ 14½
Phir	14½ @ 15½	15 @ 15½
Rice, per 100 lbs.	4 25 @ 5 25	4 25 @ 5 25
Hops, per lb.	7 @ 11	8 @ 12
Pork—Mess, per bbl.	23 50 @ 23 50	22 90 @ 23 00
Prime, per bbl.	19 15 @ 19 25	19 20 @ 19 25
Beef—Country Mess	13 50 @ 14 50	14 00 @ 15 00
Hogs, Dressed, per lb.	8½ @ 9½	Nominal
Lard, in bbls, per lb.	14½ @ 14½	14½ @ 14½
Butter—Western, per lb.	18 @ 21	15 @ 20
State, per lb.	18 @ 26	18 @ 26
Cheese, per lb.	11 @ 12	6 @ 10½

POTATOES—Mercers, per bbl.	3 50 @ 4 00	3 50 @ 4 00
Bermudas, per bbl.	@	6 00 @ 6 50
ONIONS—New-Orleans, per bbl.	@	3 00 @ 3 50
Bermudas, per lb.	16½ @ 16½	1½ @ 2
FEATHERS, Live Geese per lb.	50 @ 56	48 @ 54
SEED—Clover, per lb.	11 @ 12	Nominal
Timothy, mowed, per bushel	3 25 @ 3 50	Nominal
Timothy, reaped, per bushel	3 75 @ 4 00	Nominal
SUGAR, Brown, per lb.	9½ @ 12½	9½ @ 12
MOLASSES, New-Orleans, per lb.	75 @	70 @ 75
COFFEE, Rio, per lb.	9½ @ 11½	9½ @ 11½
Hyson Teas, per lb.	@	37½ @ 75
Congou Teas, per lb.	@	32 @ 50
Tobacco—Kentucky, &c. pr lb.	10½ @ 21	10 @ 22
Seed Leaf, per lb.	11½ @ 45	11½ @ 45
Wool—Domestic fleece, per lb.	33 @ 60	35 @ 55
Domestic, pulled, per lb.	32 @ 50	32 @ 47
HEMP—Undr'd Amer'n pr ton	170 00 @ 200	170 00 @ 200 00
Dressed American, per ton	240 00 @ 255	240 00 @ 255 00
HAY per 100 lbs.	1 00 @ 1 12½	70 @ 85
TALLOW, per lb.	11 @ 11½	11 @ 11½
WHISKY, Domestic, per gal.	33 @ 34	31½ @ 32
OIL CAKE, per ton	31 00 @ 36 00	39 00 @

The subjoined tabular statement presents summaries of the total receipts of the leading kinds of Breadstuffs, by railroad, river and coastwise, and of the total sales, here for twenty-seven business days, ending to-day, as well as of the exports from the port of New-York for the same period:

	Receipts.	Sales.	Exports.
Wheat Flour, bbls.	203,400	306,625	63,670
Wheat, bushels.	47,450	47,450	86,054
Corn, bushels.	223,500	775,500	66,137
Rye, bushels.	23,500	50,500	
Barley, bushels.		4,700	

These summaries enable us to make the following comparison of the receipts and sales:

	Receipts.	Sales.
Total 27 days this month in bushels	1,692,800	2,791,275
Total 24 days last month in bushels	1,264,000	2,639,575

Increase this month, in bushels..... 428,800 151,700
They also afford the following comparison of the exports, from the port of New-York, for twenty-four business days last month, and twenty-seven business days this month:

	LAST MONTH.	THIS MONTH.
Flour, bbls.	68,051	63,670
Wheat, bush.	88,327	86,054
Corn, bush.	152,049	66,137
Rye, bush.	1,004	

CATTLE MARKET.—The receipts of Beef Cattle for four weeks ending June 17, were 10,767, or 1,499 less than during the preceding four weeks. Receipts for the week ending May 27, 3,060; June 3, 1,949; June 10, 3,191; June 17, 2,567. Prices varied as follows: May 27, 1½c. decline; June 3, a similar advance; June 10, 1c. decline; June 17, no change; making a total decline for the month of 1c. Wednesday June 17, prices ranged: Premium Cattle, 13c. @ 13½c. First quality, 12½c. @ 13c. Medium quality, 12c. @ 12½c. Poor quality, 11½c. @ 12c. Poorest quality, 11c. @ 11½c. General selling prices, 11c. @ 13c. Average of all sales, 12c.

Receipts of Sheep and Lambs for the four weeks ending on the 17th, were 23,152, giving an increase of 7,369, over the same period of last month. Prices now range at 5c. @ 6c. live weight, or 10c. @ 12c. P. M. dressed weight. Arrivals have been much more free of late, with a good supply of lambs which bring \$3 50 @ \$6 00 per head.

THE WEATHER.—Cold and rain have thus far counterbalanced the usual heat of June. True, there have been a goodly number of bright warm days, during which vegetation strove to make amends for a tardy Spring, but those attempts were soon checked by cool rain storms. The general prospect, however, is favorable to good crops of fruit, hay, grain, potatoes and other vegetables, nor do we yet despair of a good corn season. Our condensed weather notes commencing May 23, read: clear and warm to the 27th, the mercury reaching 84° on the 25th. Rain fell during the night of the 27, 28 cloudy A. M., clear P. M. rain at night; 29 to 31 clear and warm; vegetation advancing rapidly; mercury 82° on the 31st. June 1, rainy day; 2 clear and hot; 3 clear, showers at night; 4 clear and warm; 5 and 6 clear and cool; 7 rain P. M.; 8 clear A. M., rain P. M.; 9 and 10 rain or mist; 11 heavy showers; a tornado accompanied with large sized hail passed over Long Island damaging crops and buildings; 12 to 15 clear, fine and warm; 16 to 18 cloudy and cool, with more or less rain each day; 19 heavy rain; 20 fog A. M. clear P. M.; 21 fog A. M. showers P. M.; 22 heavy thunder shower early A. M., with showers during the day; 23 clear and cool.

When this Number is Mailed.

The first copies of this (July) Number will be mailed to the most distant subscribers on Wednesday, June 24. The balance will be mailed on Thursday, Friday, and Saturday, June 25, 26, 27, those going the greatest distance being sent off first. All further delays must be charged to the U. S. Post-Office Department.

Copies Lost by Mail

Are always supplied without charge.

Personal Letters, or those for the Editor only should be marked *Private*. Persons forwarding money by mail may consider the arrival of the paper an acknowledgment of the receipt of the money.

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